

Site Assessment Plan

C6 Zero Iowa, LLC
810 East South Street
Marengo, Iowa 52301
Contaminated Sites ID: 2733

Addendum 1: January 17, 2023
January 2, 2023

Prepared for:

C6 Zero Iowa, LLC
Registered Agents Inc.
315 East 5th Street
Waterloo, Iowa 50703

Prepared by:

EcoSource, LLC
6424 University Avenue
Windsor Heights, Iowa





January 17, 2023

Mr. Michael Sullivan
Iowa Department of Natural Resources
Land Quality Bureau
502 E 9th St
Des Moines, IA 50319

**RE: Site Assessment Plan
 C6 Zero
 810 E. South Street
 Marengo, Iowa 52301
 Contaminated Site Database Site ID No. 2733**

Dear Mr. Sullivan:

This correspondence has been prepared to address the comments contained in the IDNR letter dated January 10, 2023, regarding the Site Assessment Plan prepared for the C6 Zero site in Marengo, Iowa. Both the original comment and response are provided below.

1. Section 4.2 Soil Sampling

At this time, very little is known about soil and groundwater concentrations at the site. Although not explicitly stated in the Plan, it seems an excavation of the assumed source area is planned before a full site assessment will be conducted. If this is the case, this is acceptable, given the circumstances of the site. However, some consideration must be made to define the source area before an excavation can move forward. This must be clarified in the Addendum.

The Plan describes use of a photoionization detector (PID) for field screening during excavation. This is a useful tool for volatile petroleum constituents but will likely not be useful with other possible chemicals of concern. It may be best to investigate soil in the assumed source area to determine what chemicals of concern are expected and to determine the anticipated dimensions of the excavation. A map must be provided of proposed soil sample locations in the Addendum.

Please be aware, that additional site investigation will be required after the source area excavation. Although source area soil removal is a reasonable first step, in this case, C6-Zero must still conduct a full site assessment as outlined in [567 IAC 133](#).

Response: On January 11, 2023, EcoSource personnel performed a site visit to preliminarily delineate the area of impact for the soil surrounding the building. A hand probe was utilized to take samples at different locations to help identify the horizontal and vertical extents of contamination. Based on the field conditions from the site visit, Exhibit D has been prepared and included within Appendix A to depict where hand probe samples were taken, as well as the assumed limits of excavation. During field operations, EcoSource will use visual and olfactory inspection to help direct excavation. Soil samples

will be collected every 100 linear feet and be analyzed using a PID (assumed location of sampling locations included on Exhibit D). Where samples indicate the presence of contamination, a hand probe will be used to determine the depth of contamination for additional excavation. Following excavation activities, soil samples from the floor will be collected and submitted for laboratory analysis.

It should be noted that laboratory analysis has not been conducted for any soil at the site. EcoSource is working with C6 Zero to collect samples, which will define the chemicals of concern at the site.

It is understood that additional site investigation will be required following excavation and stockpiling of the soils.

2. Section 4.3 Monitoring Well Location

Monitoring well installation is not proposed until after soil sampling is completed and a source area has been determined. At a minimum, three (3) groundwater monitoring wells must be installed immediately upon DNR approval to determine groundwater flow direction and to monitor the groundwater concentrations related to the release. Additional wells within the source area (or other required locations) can be completed after the proposed removal action, assuming the action is not delayed. A map must be provided of proposed monitoring well locations in the Addendum.

Response: To avoid the potential for site contaminants to leach into the subsurface, via conduit created by monitoring well installation, wells will not be advanced until after soil excavation is completed. Upon completion of the soil excavation activities, EcoSource will advance a minimum of three (3) monitoring wells. In addition to determining flow direction and monitoring groundwater concentrations the wells will also be used to determine hydraulic conductivity.

3. Section 4.6 Free Product Inspection

Samples taken in the stormwater drainage areas indicate that Total Extractable Hydrocarbon as Diesel (TEH – Diesel) is a chemical of concern at the site. If free product recovery is initiated, C6-Zero must notify the DNR and follow [567 IAC 135.7\(5\)](#) free product recovery and reporting requirements.

Response: Noted. C6 Zero will notify the DNR prior to collection of free product in the stormwater drainage ways and/or detention basin.

It should be noted that additional stormwater samples were collected by both the IDNR and EcoSource on January 6, 2023. Results from both sampling indicated levels below target levels in the drainage ways and the detention basin. Results from both analyses have been included within Appendix C.

4. Section 4.7 Surface Water Sampling

Statewide Standards are not generally used to define discharge limits for detention basins. C6-Zero must contact Ian Willard at [\(515\) 954-6450](tel:515-954-6450) or by email at ian.willard@dnr.iowa.gov, with the Iowa DNR Water Quality Monitoring and Assessment Section (Wasteload Allocations) to discuss the basin and possible calculation of specific discharge concentrations.



Response: EcoSource reached out to Mr. Willard on January 13, 2023 and held a video conference call with IDNR staff on January 17, 2023 to discuss allowable discharge limitations for the stormwater within the drainage basin, prior to discharge into the Iowa River.

Based on initial laboratory results taken by the IDNR on January 6, 2023, samples collected within the basin indicated concentrations below laboratory detection limits for all chemicals other than barium and diesel fuel. Through conversations with IDNR staff on January 17, 2023, it was indicated that no treatment will be necessary in the basin at this time for anything other than PFAS, but weekly stormwater sampling is recommended to monitor concentrations. During the January 17 phone call, there were no target level discussions for contaminant concentrations within the stormwater discharge, and no concern was voiced for anything other than PFAS at this time.

IDNR results are still pending for PFAS concentrations. If PFAS is detected, IDNR has indicated that End of Pipe Health Advisory Standards will need to be met prior to discharge into the Iowa River. If necessary, C6 Zero will develop a plan to address PFAS contamination within the detention basin.

It should be noted that additional stormwater samples were collected by both the IDNR and EcoSource on January 6, 2023. Results from both sets of samples indicated levels below target levels in the drainage ways and the detention basin. Results from both analyses have been included within Appendix C.

5. Section 5.1 Soil Analysis

At this time, soil analysis shall include all the proposed methods. In addition to the proposed analyses, C6-Zero shall also include analysis for PFAS using an applicable method, submitted to DNR for approval. This section notes additional soil samples will be analyzed using Iowa Method OA-1 and OA-2. Please note, future analysis requirements will be determined based on the chemicals of concern established during the initial assessment. A proposed method for PFAS must be provided in the Addendum.

Response: Soil analysis will include EPA Method 537 Modified for PFAS.

6. Section 5.2 Water Analysis

The proposed analyses are acceptable. In addition to the proposed analyses, C6-Zero shall also include the recommended EPA Method 533 for PFAS. Please note, future analysis requirements will be determined based on the chemicals of concern established during the initial assessment.

Response: Noted.

7. Section 5.3 Surface Water Analysis

The proposed analyses are acceptable. Please note, future analysis requirements will be determined based on the chemicals of concern established during the initial assessment.

Response: Noted.

8. Section 6.1 Soil Disposal and Sampling Methodology

The DNR does not have authority to enforce Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Subtitle C – Hazardous Waste requirements. However, please remember that part of the hazardous waste determinations includes identifying any “listed” waste before disposal. A waste can be deemed “listed” if it is on one of four lists (the F, K, P and U lists) found in [40 C.F.R. § 261](#). Keep in mind a listed waste can pass Toxicity Characteristic Leaching Procedure (TCLP) testing, but still be considered hazardous waste. This determination could have implications for stockpiling and disposal during the proposed removal action.

Please discuss this determination with RCRA staff at EPA Region 7 if you have any questions. Additionally, stockpiling of soil containing petrochemicals may be subject to [567 IAC 120](#).

Response: Noted. A full determination will be completed for soil and water prior to removal from the site for disposal. All state and federal requirements will be followed for the transport and disposal of the products.

9. Section 6.2 Frac/Wastewater Disposal

C6-Zero must describe specific information on the sampling technique for the Frac tank. Considering the size of the tank, an additional sample is required for future tank sampling events to ensure an accurate representation of the contents. This requirement also applies to temporary storage tanks or totes currently on-site used for the storing of free product from the release.

Response: On December 14, EcoSource oversaw the collection of the free product from the site using a vac truck. This product was containerized in the two on-site frac tanks. EcoSource personnel collected samples of the product by lowering a bailer into the tanks. Lab analysis consisted of EPA Method 8260, 8270, PCBs, PAH, Iowa Method OA-2, RCRA 8, Flashpoint, pH. The results from this analysis were included within Appendix C of the original report. If additional product is collected and containerized within the frac tanks, similar sampling methodology and analysis will be performed.

With regards to the temporary storage tanks and totes within the building, EcoSource is planning on performing an on-site pH test for each of the approximately 75 totes prior to disposal. Given that the product is assumed to be similar to what has been collected within the frac tanks, if the pH from the totes comes back similar to what was determined in the frac tanks, removing in a similar fashion as the frac tanks. If pH is substantially different from the frac tanks, additional analysis will be performed for the contents within the specific tote prior to removal and disposal.

10. Section 6.4 Surface Water Disposal – Regional Detention Basin

C6-Zero has proposed air sparging in the detention basin. Air sparging is usually effective in addressing volatile organic compounds. But at this time, there is not an established list of chemicals of concern for this site.

Alternative techniques may need to be evaluated to treat the water in the detention basin. Any waste generated from air sparging, including any foams created, must be disposed of in accordance with applicable Local, State, Federal requirements.

Response: Laboratory analysis has indicated that contamination levels within the drainage basin and waterways are below limits. Therefore, it is anticipated that air sparging will not be required as part of this project. We are still awaiting the outcomes of the PFAS analysis, and the plan will reflect the final outcomes from that testing.

11. Section 7.0 Data Evaluation

As noted above, stormwater samples taken in drainage ditches near the site indicate that TEH – Diesel is a significant chemical of concern at the site. Table 3 – Target Levels should be updated to include Tier 1 Target Levels from the Underground Storage Tank Section ([567 IAC 135](#)) for petroleum constituents. These target levels take into account a soil leaching factor as well as human health risks. Given the recent nature of this release, soil leaching could be a significant factor moving forward in site assessment and remediation. Additionally, the table should be updated to include any additional contaminants of concern that are identified.

Response: A table depicting the Tier 1 standards has been included for soil within section 7.0. This will address the TEH-Diesel results produced from soil analysis.

It should be noted that additional stormwater samples were collected by both the IDNR and EcoSource on January 6, 2023. Results from both sets of samples indicated levels below target levels in the drainage ways and the detention basin. Results from both analyses have been included within Appendix C.

12. Section 11.0 Schedule

The schedule must be expedited to address the aggravated risk at the site and to comply with the DNR Emergency Order. According to the DNR Emergency Order issued December 15, 2022, the requirements of the Site Assessment Plan must be completed by January 29, 2023.

Please note, the DNR does not have authority to enforce requirements related to the Occupational Safety and Health Administration (OSHA) or RCRA Subtitle C for hazardous waste. It appears that there are numerous potential OSHA and RCRA issues associated with this site. C6-Zero must meet all applicable requirements of these programs and communicate with the appropriate regulatory agencies when questions arise.

Response: Noted. Site implementation will be somewhat dependent on weather conditions; however, C6 Zero is committed to meeting the schedule established within the original Emergency Order. EcoSource will continue to communicate schedule updates with all parties involved.



If you have any questions regarding this information, please do not hesitate to contact us at 515.250.6695

Sincerely,

EcoSource, LLC

A handwritten signature in black ink, appearing to read "Evan Del Val", written over a horizontal line.

Evan Del Val, P.E.

Senior Project Manager

evan@ecosourceiowa.com

A handwritten signature in black ink, appearing to read "Darren Fife", written over a horizontal line.

Darren Fife, CGP #2058

Environmental Director

darren@ecosourceiowa.com



Table Contents

1.0	PROJECT UNDERSTANDING	4
1.1	Introduction	4
1.2	BACKGROUND.....	4
2.0	Emergency Response	5
3.0	GENERAL SITE GEOLOGY AND SITE HYDROLOGY.....	6
4.0	MONITORING WELL INSTALLATION, GROUNDWATER SAMPLING, AND SOIL SAMPLING.....	6
4.1	Safety	6
4.2	Soil Sampling	7
4.3	Monitoring Well Location	8
4.4	Monitoring Well Construction.....	8
4.5	Groundwater Sampling.....	8
4.6	Free Product Inspection	9
4.7	Surface Water Sampling	9
5.0	LABORATORY ANALYSIS.....	11
5.1	Soil Analysis	11
5.2	Surface Water Analysis	11
5.3	Groundwater Analysis.....	11
6.0	DISPOSAL	12
6.1	Soil Disposal and Sampling Methodology	12
6.2	Frac/Wastewater Disposal	12
6.3	Surface Water Disposal – Drainage Ways.....	14
6.4	Surface Water Treatment – Regional Detention Basin.....	14
7.0	DATA EVALUATION	14
8.0	HYDROGEOLOGIC EVALUATION	15
9.0	RECEPTOR SURVEY	15
10.0	REPORTING.....	16
11.0	SCHEDULE	16
12.0	GENERAL COMMENTS.....	16
12.1	Standard of Care	16
12.2	Additional Scope Limitations.....	16



Appendixes

Appendix A – Site Maps

Exhibit A – Topographic Map

Exhibit B – Environmental Assessment

Exhibit C – Emergency Response Exhibit

Exhibit D – Implementation Exhibit

Appendix B – EcoSource Emergency Response Day Reports and Site Photos

Appendix C – Lab Results

IDNR Results

EcoSource Results

Appendix D – Site Reports

USDA Web Soil Survey

USGS StreamStats

IDNR Facility Explorer

US Fish and Wildlife Service National Wetlands Inventory Map



1.0 PROJECT UNDERSTANDING

1.1 INTRODUCTION

The purpose of this Site Assessment Plan (henceforth referred to as “plan”) is to establish steps and procedures to sufficiently address environmental concerns present following an explosion at the C6 Zero facility in Marengo, Iowa. This plan follows an Emergency Order issued by the Iowa Department of Natural Resources (IDNR), which was signed by Director Kayla Lyon on December 15, 2022.

The contents of this plan include detailed descriptions of the mitigation efforts that have already been completed on-site as part of the initial emergency response efforts, it includes an approach for identifying the remaining areas and extents of contamination/waste present in the soils, groundwater, and surface water in the vicinity of the project site, and it includes a series of actionable steps for the removal of remaining waste and remediation of the environmental impacts, both on- and off-site.

1.2 BACKGROUND

C6 Zero is a re-manufacturing company, specializing in the reverse manufacturing of used and damaged shingles. The process employed by C6 Zero involves breaking down the shingles into their individual materials. According to reports, the facility is capable of re-manufacturing 800 tons of shingles a day, as well as storing another 2,400 tons of shingles.

As a means of background related to the explosion, excerpts from the timeline established within the Emergency Order have been reproduced here. The order states that, “On December 8, 2022, an explosion occurred at the facility, followed by a major facility fire. Fifteen fire departments and two hazmat teams responded, along with numerous other support teams.” Furthermore, “On December 9, 2022, DNR sent three field staff to the facility to continue assessing run-off concerns. The contaminated stormwater run-off was in a ditch that flows into the Iowa River”. Continued documented site evaluations from the IDNR show the visible presence of contamination, “on December 14, 2022...multiple large ankle-deep pools of unknown free product and/or contaminated water with a dark color and oily sheen...large patches of black stained soil and grass; multiple stormwater run-off flows, dark and oily in color and texture going into ditches connected to the Iowa River; and piles of debris and building rubble”. Finally, “On December 15, 2022, DNR received water sample analysis for the samples taken from areas where the normal stormwater flows would leave the property and enter nearby waters of the state. Multiple samples showed evidence of the discharge of pollutants resulting in contamination in excess of statewide water quality standards.”

On December 13, 2022, EcoSource, LLC was contacted by Kinzenbaw Earth Moving to assist C6 Zero with emergency response efforts to address the immediate environmental concerns at the subject site. EcoSource personnel did a thorough investigation of the area, including site walks of the grounds and adjacent waterways, and participated in exploratory conversations with various stakeholders, including the ownership group, Iowa County Emergency Management personnel, IDNR officials, City officials, and contractors that were present during the firefighting efforts. The conditions that EcoSource encountered were consistent with what was described by the IDNR in



their Emergency Order. EcoSource field reports and photographs are included as **Appendix B** and document the conditions present at that time.

2.0 EMERGENCY RESPONSE

Prior to EcoSource's involvement, various steps had been taken to contain the product on-site. Multiple truckloads of sand had been delivered to the site and several sand berms were constructed, most notably at the upstream side of the culvert that conveys runoff from the site, and at the dock area on the east side of the building, where large quantities of firefighting water and heavy free product were observed and impounded. There were multiple containers present on-site that were being utilized for debris collection, and various drums and totes were filled with various product-soaked materials. Exhibit 2 within **Appendix A** shows a diagram of the site, including locations of identified waste.

On December 14, 2022, EcoSource contracted with vacuum trucks to collect and containerize the free-standing liquid throughout the site. The areas of focus included the product contained in the dock area immediately east of the building, standing water in the on-site waterways, and an area on the east side of the building where heavy product pooled in a paved staging area. The product was pumped using vacuum trucks and containerized in two (2) 21,000-gallon frac tanks contracted by EcoSource and staged in the parking lot on the north side of the building. Collection of the water/product mix was completed on December 16, 2022, and approximately 31,000 gallons of product was collected. The frac tanks have not been emptied and remain on-site.

EcoSource collected a sample of the product on December 14, 2022 and submitted for laboratory analysis for Volatile Organic Compounds (VOCs) by EPA Method 8260D (SW 846), Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270, Total Extractable Hydrocarbons by Iowa method OA-2, RCRA 8 Metals by EPA Method 6010D, 6020B, and 7470A, Polycyclic Aromatic hydrocarbons (PAHs), pH, Polychlorinated Biphenyls (PCBs) by EPA Method 8280A, and Flashpoint. Results are included within **Appendix C**. Not included within the list of contaminants is PFAS, which is a chemical present in firefighting foam. Drums of firefighting foam were identified throughout the site. It is worth noting that this material is no longer considered acceptable by the State of Iowa for fighting fires due to the environmental impacts it presents in surface water contamination. Levels of PFAS are suspected in the off-site waterways and regional detention basin and will be verified during the implementation of the plan.

Additional sand was mobilized to the site and was spread across contaminated paved areas to help absorb free product, as well as to minimize potential tracking from vehicular traffic. This sand will be collected and properly disposed of with the other contaminated solids during site clean-up. Sand was also used to solidify a portion of the heavy product that was unable to be collected by the vac trucks at the paved staging area east of the building. This product-soaked sand was collected using a skid-steer and placed on plastic-covered concrete and covered in plastic to reduce the chance for additional runoff. A sand berm was placed around the cover to ensure containment of the product. This material will be properly disposed of with the other contaminated solids once the waste is properly characterized. Exhibit 2 within **Appendix A** shows the location of all visually impacted areas throughout the site.



3.0 GENERAL SITE GEOLOGY AND SITE HYDROLOGY

The C6 Zero facility sits on approximately 26 acres of land on the eastern edge of the City of Marengo. According to the USDA Web Soil Survey computer program, the site consists predominantly of Bremer silty clay loam, with pockets of Zook and Nevin silty clay loams. A copy of the soil survey has been included within **Appendix D**.

The topography of the site is relatively flat, with slight fall from south to north. There is a drainage ditch on the eastern edge of the property, as well as another north of the building. A topographic map has been included within **Appendix A** and shows gradual slopes to the northeast, which is where drainage is conveyed. Once off-site, drainage is conveyed, via a drainage ditch on the south side of E. South St, towards a regional detention basin approximately 0.7 miles to the east of the subject property. This basin collects water on the upstream side of a levy system, which is ultimately discharged into the Iowa River.

Using the USGS StreamStats computer program, the watershed, which includes the entire project site, was delineated to determine the potential extents of the surface water impacts resulting from the release. The outlet of the regional detention basin was chosen as the point of delineation for the watershed, as it represents the most downstream location prior to discharge into the Iowa River. The delineation shows that the C6 Zero facility is part of a 1.4 square mile natural watershed, which includes land located predominantly to the southeast of the subject property. This boundary includes only the areas that naturally surface flow to the detention. It is worth noting that there is a wastewater lagoon within the watershed, which suggests that additional flows from the City of Marengo may be conveyed to that location for treatment. This report does not include an investigation into the sanitary or storm sewer systems present within the City of Marengo, however, that effort will occur as part of the future Site Assessment Report. A copy of the StreamStats report has been included within **Appendix D**.

During a review of the U.S. Fish and Wildlife Service National Wetland Inventory, EcoSource discovered a variety of wetlands on the downstream side of the levy, adjacent to the Iowa River. Both freshwater emergent and freshwater forested/shrub wetlands are present. A copy of the National Wetland Inventory map for this area is included within **Appendix D**.

According to the IDNR Facility Explorer database, there is one (1) water well located within 1,000 feet of the site. IDNR Well No. 61838 is reportedly located 267 feet from the project site and is relatively shallow (reported at 37 feet deep). The actual well location, as well as an on-site well survey, will be conducted during assessment. The IDNR Facility Explorer well search report is attached within **Appendix D**.

4.0 MONITORING WELL INSTALLATION, GROUNDWATER SAMPLING, AND SOIL SAMPLING

4.1 Safety

EcoSource has a 100% commitment to the safety of all its employees. As such, and in accordance with our Incident and Injury Free safety culture, EcoSource will update our project safety plan for use by our personnel during field services. Prior to commencement of on-site activities, EcoSource will hold a meeting to review health and safety needs for this specific project. Currently, we anticipate



performing fieldwork in an EPA Level D work uniform consisting of coveralls (Tyvek® or equivalent), hard hats, safety glasses, protective gloves, and steel-toed boots. It may become necessary to upgrade this level of protection during sampling activities if petroleum or chemical constituents are encountered in soils or groundwater that present an increased risk for personal exposure.

4.2 Soil Sampling

Soil sampling at the site will be completed to define the limits of impact within the subject site. To determine the extent of on-site soil contamination, a sample will be obtained every 100 square feet of a suspected contaminated area for field screening. For larger areas of contamination, probe samples may step out greater than 100 square feet to verify the presents/absence of contaminants. If field screening readings indicate levels above 10 ppm, excavation will step out until field Screening readings are less than 10 ppm. A grid map for sample locations and field screening readings, will be prepared and submitted along with the excavation report.

Drilling services will be performed by a State of Iowa certified well contractor under the supervision of an EcoSource environmental professional. Soil borings will be conducted utilizing a Geoprobe® drilling rig equipped with a continuous core barrel and disposable poly vinyl chloride (PVC) liners. Drilling equipment will be cleaned using a high-pressure washer prior to beginning the project. Soil sampling equipment will be cleaned using an Alconox wash and potable rinse water prior to beginning the project and before beginning each boring. The PVC liners are disposable and dedicated to the soil core; therefore, will not require cleaning. Additional field decontamination and cleaning of the drilling equipment (clean augers and drill rods), drill rig, and other equipment will be conducted as needed between borings to prevent cross contamination between locations. If shallow soil contamination is identified, hand auguring/soil probing may be substituted for mechanical methods.

Soil cores from the borings will be continuously logged and field screened for organic vapors using a photoionization detector (PID). This device provides a direct reading in parts per million (ppm) of volatile organic vapors. The PID is a nonspecific total vapor detector and cannot be used to identify unknown substances; it can only roughly quantify them. The PID will be calibrated in accordance with the manufacturer's recommendations before and after the field activities with 100 ppm isobutylene. Upon removal of the sampler from the borehole, EcoSource will cut a portion of the sample and seal it in a clear plastic soil bag. After a stabilization period, EcoSource will screen the headspace above the soil using the PID equipped with a 10.6 eV lamp source.

The borings will be advanced until PID readings are <10 ppm, not to exceed 10 feet into groundwater. EcoSource anticipates the shallow borings will extend 1 to 3 feet below ground surface (bgs).

Soil samples submitted for analysis will be collected and placed in glassware prepared and provided by the laboratory and placed on ice in a cooler. The sample cooler(s) will contain completed chain-of-custody forms, be secured with a custody seal, and be relinquished to a State of Iowa certified analytical laboratory for standard turnaround.



4.3 Monitoring Well Location

Six exploratory borings/monitoring wells will be advanced at the site based on the impacts identified during EcoSource's soil sampling activities. These monitoring wells will be advanced to provide further subsurface information with respect to soil and groundwater. The borings/wells will be installed surrounding the assumed source area from the site investigation. The proposed locations will account for documenting triangulated groundwater flow direction (assumed to the north/northeast) and provide definition of impacts in the gradient directions from the assumed source area. The actual placement of borings/wells will be based on utilities, equipment access, and EcoSource personnel discretion. It should be noted that additional wells may be necessary to further bracket any soil, groundwater, or free product plume(s) that are identified during field operations.

4.4 Monitoring Well Construction

Construction of the monitoring wells will be performed by a State of Iowa certified well contractor using hollow stem or continuous flight augers under the supervision of an EcoSource environmental professional. Drilling equipment will be cleaned using a high-pressure wash prior to beginning the project. Additional field decontamination and cleaning of the drilling equipment (clean augers and drill rods), drill rig, and other equipment will be conducted as needed between wells to prevent cross contamination between locations.

The monitoring wells will be constructed with 10 feet of 2-inch diameter 0.010 machine slotted PVC within well screen at the bottom of the well with a threaded bottom plug. The screen will be installed with 2-inch diameter PVC riser pipe extending to slightly below the ground surface. The screen will be placed with an annular graded silica sand pack around the well screen from the bottom of the well to approximately one foot above the top of the screen. Medium chip bentonite will be placed in the borehole annulus from the top of the sand pack to within approximately one foot of the ground surface. The monitoring wells will have flush mount protective covers encased in concrete and have an expandable cap installed at the top of the riser.

The ground surface and top of casing elevations will be measured for the monitoring wells. The wells will be surveyed to a known reference point benchmark in feet converted to the United States Geological Survey (USGS) elevation above sea level (ASL), if available. In not available, an arbitrary benchmark of 100 feet ASL will be utilized. The ground surface elevations will be surveyed to an accuracy of +/- 0.01 feet and the horizontal location will be determined by measuring to the existing structures and/or with global positioning system (GPS) satellite location data.

The monitoring wells will be developed following installation utilizing a peristaltic pump and disposable polyethylene tubing or disposable polyethylene bailers until the removed purge water is relatively free of fine-grained sediment or until the well dries. The wells will be allowed to stabilize to static conditions following development, approximately 24 hours after installation.

4.5 Groundwater Sampling

Prior to groundwater sampling, the depth to water level measurements will be collected from each monitoring well using a Geotech® or Solinst® water meter probe that is accurate to +/- 0.1 feet



according to the manufacturer. The wells will be purged according to low-flow procedures at a rate of 200-400 gallons per minute utilizing a peristaltic pump and disposable polyethylene tubing dedicated to each well or disposable polyethylene bailers. Once groundwater stabilization has been obtained, a groundwater sample will be collected from each well. If a well does not stabilize during low flow procedures, five saturated well casing volumes will be removed, and the well will be sampled. If a well dries before low flow stabilization, the well will be allowed to return to static condition and a groundwater sample will be collected. Non-dedicated sampling equipment will be cleaned before and after each use and between wells-using an Alconox® and rinse water.

According to Quality Assurance and Quality Control (QA/QC) protocols, one blind duplicate groundwater sample will be collected for every 10 monitoring wells sampled. In addition, one trip blank will accompany each cooler submitted to document sample

Groundwater samples, including blind duplicate, and trip blank(s) will be collected and placed in glassware provided and prepared by the laboratory and placed on ice in a cooler. The sample cooler(s) will contain completed chain-of-custody forms, be secured with a custody seal, and be relinquished to a State of Iowa certified analytical laboratory for standard turnaround.

4.6 Free Product Inspection

During drilling activities, observation of gross contamination and free product will be noted, if applicable. Measurement of free product would occur utilizing a Geotech® or Solinst® interface probe that is accurate to +/- 0.01 feet according to the manufacturer. Depth to water, depth to free product, and free product thickness would be recorded for submittal to the IDNR. Measurable free product would be recovered using disposable polyethylene bailers and containerized for offsite disposal. If applicable, the volume of free product and groundwater removed would be recorded for submittal to the IDNR.

4.7 Surface Water Sampling

A clean pair of new, nitrile, disposable gloves will be worn each time a different location is sampled. Sample containers of material suspected of containing high concentrations of contaminants will be stored separately from samples suspected of being lower concentration. All background or control samples will be collected and placed in separate coolers or shipping containers whenever possible. Sample collection activities will proceed progressively from the least suspected contaminated area to the most suspected contaminated area when possible. Personnel will use new, verified, and certified-clean disposable or non-disposable equipment cleaned according to manufacturer's recommendations.

Surface water samples will be collected either by directly filling the container from the surface water body being sampled or by decanting the water from a collection device such as a disposable bailer or other device.

A sample may be collected directly into the sample container when the surface water source is accessible by wading or other means. The sampler will face upstream if there is a current and collect the sample without disturbing the bottom sediment. The surface water sample will be collected prior to the collection of a sediment sample at the same location.



A peristaltic pump may be utilized for surface water sampling. The peristaltic pump will be used to collect a water sample from various depths. Teflon® bailers may also be used for surface water sampling for non-discrete interval sampling.

On December 9, 2022, DNR Personnel conducted stormwater sampling from various locations. Tables 1a, 1b, and 1c below present reported concentrations vs state standards from locations concentrations above laboratory detection limits. These results provide a quantifiable baseline for which to compare additional stormwater sampling analytical results.

On January 6, 2023, IDNR and EcoSource collected additional stormwater samples at location 1 and 3. The results have been included in the tables below and reports have been included within Appendix C. Concentration levels have significantly reduced at both locations.

Initial Stormwater Concentrations –

Table 1a – Sample No. 1

Sample No. 3 (Impoundment)			
Chemical	Concentration 12/9/2022 (ug/L)	Concentration 1/6/2023 (ug/L)	State Standard Storm water (PGWS) (ug/L)
Benzene	9.0	<2.0	5.0
Toluene	8.0	<2.0	700.0
Ethylbenzene	3.0	<2.0	100.0
Xylenes	<2.0	<6.0	10000.0
TEH Waste Oil	<2000	730.0	730.0
TEH Diesel	28,000.0	2,200.0	2,200.0

Table 1b –Sample No. 3

Sample No. 3 (Impoundment)			
Chemical	Concentration 12/9/2022 (ug/L)	Concentration 1/6/2023 (ug/L)	State Standard Storm water (PGWS) (ug/L)
Benzene	4.0	<5.0	5.0
Toluene	4.0	<5.0	700.0
Ethylbenzene	<2.0	<5.0	100.0
Xylenes	35.0	<5.0	10000.0
TEH Waste Oil	<2000	<278	730.0
TEH Diesel	16,000.0	<278	2,200.0

Table 1c –Sample No. 4

Sample No. 4 (Outflow)			
Chemical	Date Obtained	Concentration (ug/L)	State Standard Storm water (PGWS) (ug/L)
Benzene	12/9/22	7.0	5.0
Toluene	12/9/22	3.0	700.0
Ethylbenzene	12/9/22	<2.0	100.0
Xylenes	12/9/22	15.0	10000.0
TEH Waste Oil	12/9/22	<2000	730.0
TEH Diesel	12/9/22	9,800.0	2,200.0

Bold indicates concentration above state standard.

5.0 LABORATORY ANALYSIS

5.1 Soil Analysis

EcoSource is recommending obtaining soil samples for initial waste characterization for a broader range of analysis followed by more specific analysis once waste determination has been made. The initial soil samples will be submitted for laboratory analysis for Volatile Organic Compounds (VOCs) by EPA Method 8260D (SW 846), Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270, Total Extractable Hydrocarbons by Iowa method OA-2, RCRA 8 Metals by EPA Method 6010D, 6020B, and 7470A, Flashpoint, and EPA Method 537 Modified for PFAS. Additional soil samples submitted to the laboratory will be analyzed for the chemicals of concern identified during the initial analysis.

5.2 Surface Water Analysis

Surface water samples from drainage ways and the regional detention pond, will be submitted to the laboratory to be analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260D (SW 846), Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270, Total Extractable Hydrocarbons by Iowa method OA-2, RCRA 8 Metals by EPA Method 6010D, 6020B, and 7470A, Flashpoint, and EPA Method 533 for PFAS.

5.3 Groundwater Analysis

EcoSource is recommending obtaining groundwater samples for initial assessment for a broader range of analysis followed by more specific analysis once determination has been made. The initial groundwater samples will be submitted for laboratory analysis for Volatile Organic Compounds (VOCs) by EPA Method 8260D (SW 846), Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270, Total Extractable Hydrocarbons by Iowa method OA-2, RCRA 8 Metals by EPA Method 6010D, 6020B, and 7470A, Flashpoint, and EPA Method 533 for PFAS. Additional groundwater samples



submitted to the laboratory will be analyzed for the chemicals of concern identified during the initial analysis.

6.0 DISPOSAL

6.1 Soil Disposal and Sampling Methodology

The excavation plan will incorporate the results of the proposed soil delineation to determine the overall extent of the necessary excavation. Using the field PID readings, results from the laboratory soil testing, and onsite observations from EcoSource personnel, EcoSource will oversee the excavation, stockpiling and disposal of the impacted soils. Collected soils will be stockpiled on paved surfaces covered with plastic, and containment berms will be placed around the stockpiles. The containment berms will be constructed of clay and will be placed in a fashion that mitigates the potential transport of material off-site. Soil stockpiles will be covered with plastic at the end of each working day to minimize erosion and off-site transport from wind and rain. Once proper waste characterization has been completed, disposal of the soils will follow all state and federal regulations regarding transport and disposal methods. Final disposal methodology will be determined following waste characterization and may include either landfill disposal or field application at a certified landfarm. A separate excavation summary report will be prepared indicating the extent of the excavation, the approved disposal methodology, site photographs, and disposal documentation. Waste determination will be necessary before disposal considerations can be made.

Within the drainage ways, a probe sample will be obtained every 50 linear feet. The soil probe will be advanced to below the observed hydrocarbon impact based on PIDs. A soil sample will be obtained from locations of high PID for field screening. At each 50-foot interval, a horizontal transect of borings will be advanced on each ditch wall to determine both the vertical and horizontal extent and potential impact of the drainage way. GPS coordinate will be obtained from each field screening and sample location which will be incorporated into a site map with corresponding data table. Should excavation within the drainage way be required, methodologies similar to those described above will be utilized for soil excavation, stockpiling, and disposal.

6.2 Frac/Wastewater Disposal

EcoSource collected a sample of the product/water mix on December 14, 2022 and submitted for laboratory analysis for Volatile Organic Compounds (VOCs) by EPA Method 8260D (SW 846), Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270, Total Extractable Hydrocarbons by Iowa method OA-2, RCRA 8 Metals by EPA Method 6010D, 6020B, and 7470A, Polycyclic Aromatic hydrocarbons (PAHs), pH, Polychlorinated Biphenyls (PCBs) by EPA Method 8280A, and Flashpoint. Results are included within **Appendix C** and summarized in Table 2 below. The water will be permitted through a special waste permit from the Metropolitan Waste Authority and disposed of at Metro Park East landfill located at 12181 NE University Avenue, Mitchellville, Iowa through their liquid solidification program.

Table 2 – FRAC Results

Frac Sample		
Chemical	Date Obtained	Concentration (ug/L)
cis-1,2-Dichloroethene	12/13/22	74.5
Ethylbenzene	12/13/22	60.3
Isopropylbenzene	12/13/22	2050
n-Butylbenzene	12/13/22	1320
n-Propylbenzene	12/13/22	7680
p-Isopropyltoluene	12/13/22	420
Tetrachloroethene	12/13/22	80.5
1,2,4-Trimethylbenzene	12/13/22	91500
1,3,5-Trimethylbenzene	12/13/22	19200
Xylenes, Total	12/13/22	2540
Acenaphthene	12/13/22	7910
Acenaphthylene	12/13/22	6200
Anthracene	12/13/22	3800
Fluorene	12/13/22	8390
2-Methylnaphthalene	12/13/22	60700
Naphthalene	12/13/22	26400
Phenanthrene	12/13/22	15500
Pyrene	12/13/22	12900
2-Methylnaphthalene	12/13/22	10800
Diesel	12/13/22	23,700,000
Waste Oil	12/13/22	6,450,000
Chemical (RCRA Metals)	Date Obtained	Concentration (mg/L)
Arsenic	12/13/22	0.00549
Barium	12/13/22	0.0896
Cadmium	12/13/22	0.00102
Chromium	12/13/22	0.00788
Lead	12/13/22	0.0461
Selenium	12/13/22	0.00939
Silver	12/13/22	0.00472
Flash Point	12/13/22	152 degrees

There are approximately 75 additional temporary tanks and totes that were used to containerize product within the building, which are planning to be disposed of with the frac tanks. These tanks/totes were filled by C6 Zero staff. Though the product is assumed to be similar to what was collected and containerized within the frac tanks, EcoSource is planning to pH test each tote prior to removal for disposal. If the pH level is similar to the frac tanks, the product will be disposed of in a similar fashion. If the pH level is significantly different from the frac tanks, tote will be segregated, and a separate determination will be conducted prior to removal.



6.3 Surface Water Disposal – Drainage Ways

Pending laboratory results from the recommended water samples collected from off-site surface drainage ways, contaminated surface water will be collected using a vac truck and contained within a frac tank. Disposal of all surface water will follow state and federal regulations, including acceptable procedures for transport, solidification, and disposal at an approved solid waste facility.

6.4 Surface Water Treatment – Regional Detention Basin

Based on initial laboratory results taken by the IDNR on January 6, 2023, samples collected within the basin indicated concentrations below laboratory detection limits for all chemicals other than barium and diesel fuel. Through conversations with IDNR staff on January 17, 2023, it was indicated that no treatment will be necessary in the basin at this time for anything other than PFAS, but weekly stormwater sampling is recommended to monitor concentrations.

IDNR results are still pending for PFAS concentrations. If PFAS is detected, IDNR has indicated that End of Pipe Health Advisory Standards will need to be met prior to discharge into the Iowa River. If necessary, C6 Zero will develop a plan to address PFAS contamination within the detention basin.

As stated above, there are existing wetlands on the downstream side of the levy. If additional treatment or pumping techniques are required to properly treat the water within the detention basin, consideration for safeguarding the health and well-being of the wetland ecology and habitat will be addressed.

7.0 DATA EVALUATION

Collected data will be reviewed and compiled to depict current environmental conditions in the subsurface in and around the site. The data will be tabled and compared to the SWS, taking into consideration hydrogeologic characteristics and potentially affected receptors. Isoconcentration maps depicting concentration plumes (2) of individual chemicals of concern (COCs) will be developed and presented.

The IDNR has established SWS for use in the Iowa Land Recycling Program (LRP) and will be utilized as action levels for comparison to the soil and groundwater analytical results. Site specific SWS can be developed for soil according to the use and access restrictions, though it is not anticipated that this will be necessary based on previous site data. For site evaluation and monitoring, EcoSource will compare collected samples to the SWS for the applicable soil and groundwater source.

Table 3 presents a list of recommended analysis and target levels to be considered throughout the lifecycle of this project. The full chemical list, as found in **Appendix C**, indicates other potential COC's identified in the samples taken during the Emergency Response phase.

If additional chemicals are identified throughout the assessment process, all parties will be notified, and a determination will be made if additional analysis will be required on future sampling of soil, groundwater, and stormwater. The target list and target level include but is not limited to:



Table 3 –Target Levels

Chemical	Date Obtained	Tier 1 Targe Levels (Soil Leaching to Groundwater)	State Standard Soil (mg/kg)	State Standard Storm water (PGWS) (ug/L)
Benzene	12/13/22	0.54	56.0	5.0
Toluene	12/13/22	42	6,100.0	1,000.0
Ethylbenzene	12/13/22	15	7,600.0	700.0
Xylenes	12/13/22	NA	15,000.0	10,000.0
TEH Waste Oil	12/13/22	NA	9,400.0	730.0
TEH Diesel	12/13/22	3,800	28,000.0	2,200.0

8.0 HYDROGEOLOGIC EVALUATION

Following construction and stabilization of the monitoring wells, depth to water levels will be measured from each location. Depth to water measurements will be converted into elevations and a piezometric map will be developed to indicate the estimated groundwater flow direction.

9.0 RECEPTOR SURVEY

EcoSource will contact the City of Marengo for information regarding their sanitary sewer, storm sewer, and water main locations and construction details. Any observed discrepancies to the locations of the public utilities that are identified during field observations, as well as any additional utilities located during public and/or private utility locates, will be added to future maps.

As stated earlier, according to the IDNR Facility Explorer database, there is one (1) water well located within 1,000 feet of the site. IDNR Well No. 61838 is reportedly located 267 feet from the project site and is relatively shallow (reported at 37 feet deep). The actual well location, as well as an on-site well survey, will be conducted during assessment.

The nearest surface water feature to the site is a drainage ditch that conveys water towards a regional stormwater detention pond approximately 0.7 miles to the east of the site. This pond collects stormwater from an approximate 1.4 square mile (minimum) watershed. The presence of a wastewater lagoon within the watershed suggests that additional area may be directed towards the watershed. This will become more apparent following an evaluation of the City of Marengo's sanitary and storm sewer systems. There does not appear to be any other surface water within the vicinity of the site.

EcoSource will continue to refine the receptor survey during the field activities and data will be updated within the final Site Assessment Report (SAR). This will include, but not be limited to, public and private utility locations, enclosed subgrade spaces, and zoning restrictions. A field survey will be conducted to visually inspect for water wells and surface water bodies within 300 to 500 feet of the site. The wells and surface water bodies identified will be added to future maps.



10.0 REPORTING

Once field activities are complete and laboratory results have been received, a SAR will be prepared to present the obtained data. The report will include the following information and be submitted to the IDNR Contaminated Sites Section for review:

- Description of field activities and techniques
- Scaled site diagram with investigatory sampling locations
- Tabled analytical results
- Plume maps for elevated COCs in soil and groundwater
- Boring logs and laboratory reports
- Risk Assessment (Cumulative Risk Calculator) and Pathway Discussions
- Summation of disposal activities, including waste manifests
- Conclusions and Recommendations

11.0 SCHEDULE

The following is a tentative schedule for implementing the steps outlined in this plan, assuming IDNR approves this plan by February 2, 2023, and the current property owner approves the budget, provides a fee retainer, and grants an access agreement by February 9, 2023.

- Complete field activities – January 29, 2023 (This date is dictated by the IDNR Emergency Order, which required the site to be cleaned up within 45 days from December 15, 2022).
- Submit SAR – June 2023

Please note that this schedule is tentative and will be dependent upon the EcoSource drill rig and personnel availability, subcontractor availability, timing of laboratory results, weather, budget approval, etc. EcoSource will provide regular updates during the activities and update the schedule for the IDNR and C6 Zero as necessary.

12.0 GENERAL COMMENTS

12.1 Standard of Care

EcoSource's services will be performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. EcoSource makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that EcoSource does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These services will be performed in accordance with the scope of work agreed upon with you, our client, as reflected in our proposal.

12.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the onsite activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of



hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during these investigations. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services. Future site activities may determine the need for additional site work outside of the scope of this plan and/or our proposal and lengthen the project schedule. In addition, following review of the plan and/or SAR the IDNR may require additional site work outside of the scope of these services.

If you have any questions or comments regarding this Site Assessment Work Plan, please feel free to contact Evan Del Val at 619-817-5524 or via email at evan@ecosourceiowa.com.

Sincerely,

EcoSource, LLC

A handwritten signature in black ink, appearing to read "Evan Del Val".

Evan Del Val, P.E.

Senior Project Manager

evan@ecosourceiowa.com

A handwritten signature in black ink, appearing to read "Darren Fife".

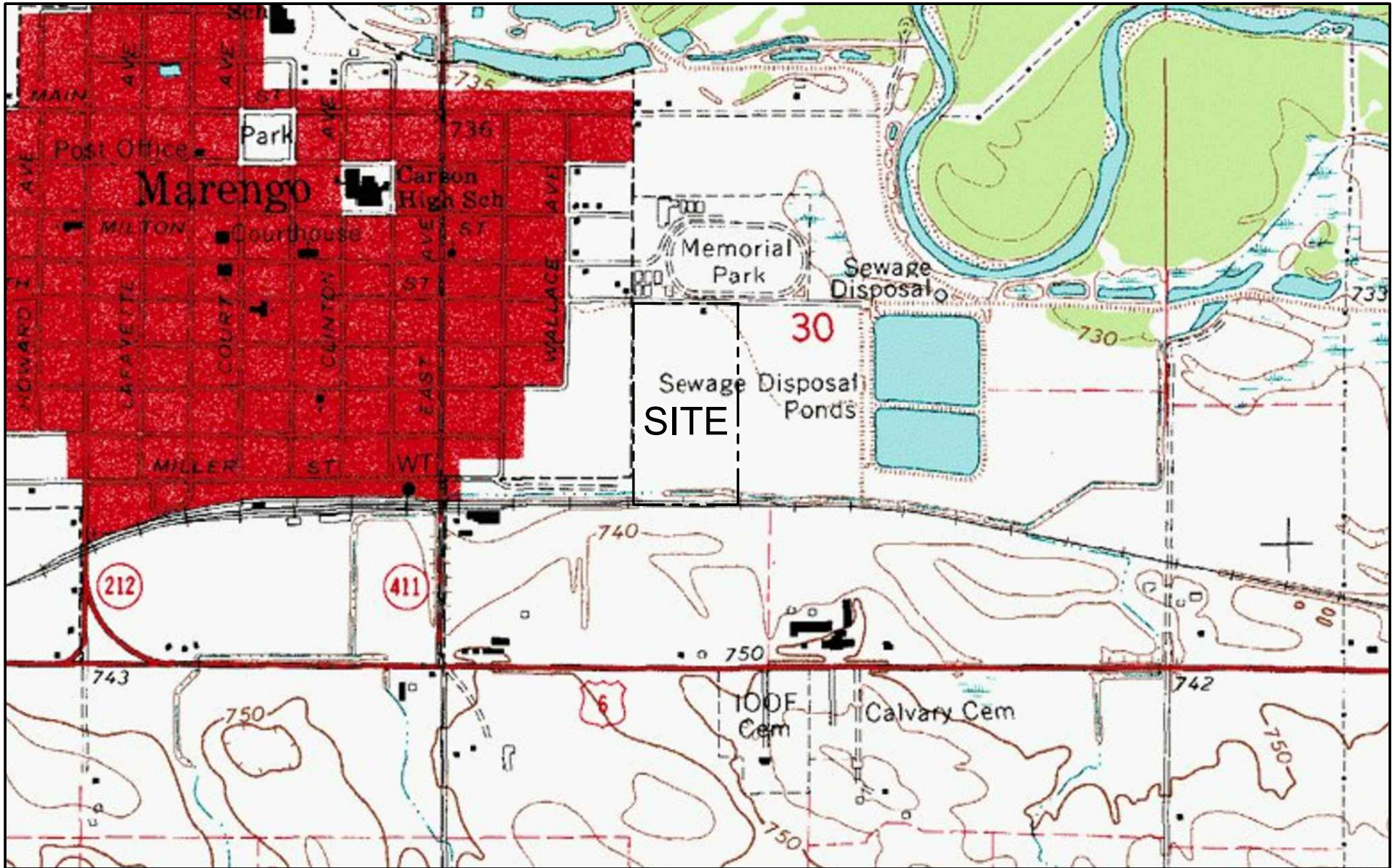
Darren Fife, CGP #2058

Environmental Director

darren@ecosourceiowa.com

APPENDIX A

SITE EXHIBITS



TOPOGRAPHIC MAP

JANUARY 2023

EXHIBIT A

6424 University Avenue
Windsor Heights, IA 50324
Phone: 515.250.6695
www.ecosourceiowa.com



0 SCALE 1,000 FT.

C6 ZERO
810 EAST SOUTH STREET
MARENGO, IOWA

- WATER SUPPLY
- GAS LINE
- SAN — SANITARY SEWER
- SS — STORM SEWER
- COM — COMMUNICATIONS
- ELECTRIC
- UNDERGROUND PIPING
- PROPERTY BOUNDARY
- FLOW DIRECTION
- SAMPLING LOCATION



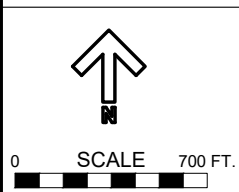


ENVIRONMENTAL ASSESSMENT EXHIBIT

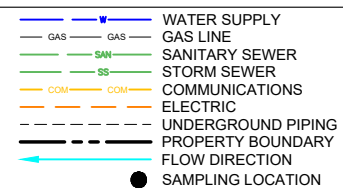
JANUARY 2023

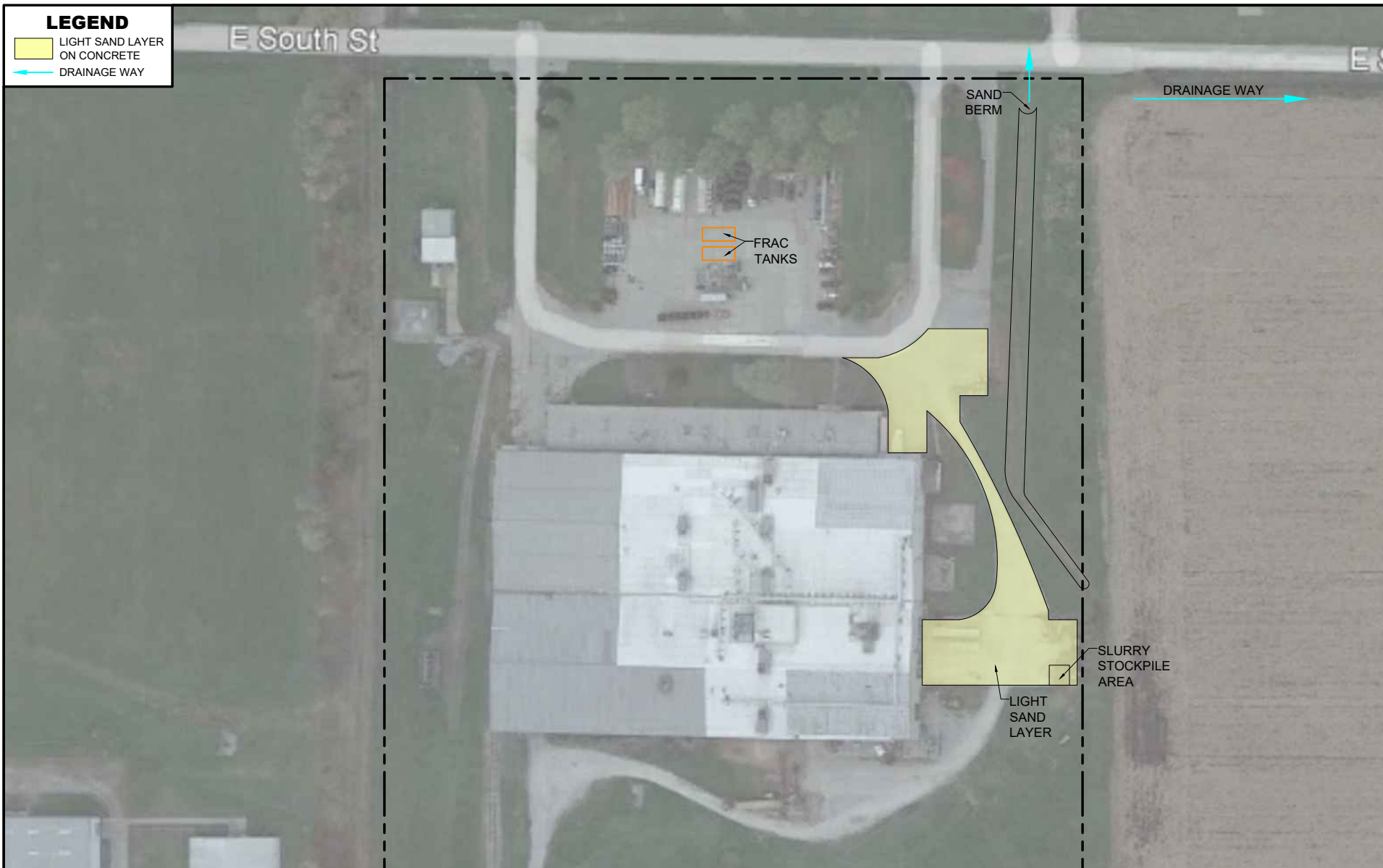
EXHIBIT B

6424 University Avenue
Windsor Heights, IA 50324
Phone: 515.250.6695
www.ecosourceiowa.com





23001 - SITE ASSESSMENT PLAN - C6 ZERO
810 EAST SOUTH STREET
MARENGO, IOWA





EMERGENCY RESPONSE EXHIBIT		JANUARY 2023		EXHIBIT C																															
 SCALE 0 150 FT. 	<h2 style="margin: 0;">23001 - SITE ASSESSMENT PLAN - C6 ZERO</h2> <h3 style="margin: 0;">810 EAST SOUTH STREET</h3> <h3 style="margin: 0;">MARENGO, IOWA</h3>				<table style="width: 100%; border: none;"> <tr> <td style="width: 10px; border-bottom: 1px solid blue;"></td> <td style="width: 10px; border-bottom: 1px solid blue;"></td> <td style="font-size: 0.8em;">WATER SUPPLY</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px solid grey;"></td> <td style="width: 10px; border-bottom: 1px solid grey;"></td> <td style="font-size: 0.8em;">GAS LINE</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px solid green;"></td> <td style="width: 10px; border-bottom: 1px solid green; text-align: center;">SAN</td> <td style="font-size: 0.8em;">SANITARY SEWER</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px solid green;"></td> <td style="width: 10px; border-bottom: 1px solid green; text-align: center;">SS</td> <td style="font-size: 0.8em;">STORM SEWER</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px solid orange;"></td> <td style="width: 10px; border-bottom: 1px solid orange; text-align: center;">COM</td> <td style="font-size: 0.8em;">COMMUNICATIONS</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px solid orange;"></td> <td style="width: 10px; border-bottom: 1px solid orange; text-align: center;">COM</td> <td style="font-size: 0.8em;">ELECTRIC</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px dashed black;"></td> <td></td> <td style="font-size: 0.8em;">UNDERGROUND PIPING</td> </tr> <tr> <td style="width: 10px; border-bottom: 2px dashed black;"></td> <td></td> <td style="font-size: 0.8em;">PROPERTY BOUNDARY</td> </tr> <tr> <td style="width: 10px; border-bottom: 1px solid blue;"></td> <td style="width: 10px; border-bottom: 1px solid blue;"></td> <td style="font-size: 0.8em;">FLOW DIRECTION</td> </tr> <tr> <td style="width: 10px; text-align: center;">●</td> <td></td> <td style="font-size: 0.8em;">SAMPLING LOCATION</td> </tr> </table>			WATER SUPPLY			GAS LINE		SAN	SANITARY SEWER		SS	STORM SEWER		COM	COMMUNICATIONS		COM	ELECTRIC			UNDERGROUND PIPING			PROPERTY BOUNDARY			FLOW DIRECTION	●		SAMPLING LOCATION
			WATER SUPPLY																																
		GAS LINE																																	
	SAN	SANITARY SEWER																																	
	SS	STORM SEWER																																	
	COM	COMMUNICATIONS																																	
	COM	ELECTRIC																																	
		UNDERGROUND PIPING																																	
		PROPERTY BOUNDARY																																	
		FLOW DIRECTION																																	
●		SAMPLING LOCATION																																	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 60%;"> <p>6424 University Avenue Windsor Heights, IA 50324 Phone: 515.250.6695 www.ecosourceiowa.com</p> </div> <div style="width: 35%; text-align: right;"> </div> </div>																																			



IMPLEMENTATION EXHIBIT		JANUARY 2023		EXHIBIT D	
 <p>0 SCALE 150 FT.</p>		<p>23001 - SITE ASSESSMENT PLAN - C6 ZERO</p> <p>810 EAST SOUTH STREET</p> <p>MARENGO, IOWA</p>		<p>6424 University Avenue Windsor Heights, IA 50324 Phone: 515.250.6695 www.ecosourceiowa.com</p> 	
		<p>— GAS — GAS —</p> <p>— SAN — SANITARY SEWER</p> <p>— SS — STORM SEWER</p> <p>— COM — COMMUNICATIONS</p> <p>— ELECTRIC —</p> <p>— UNDERGROUND PIPING —</p> <p>— PROPERTY BOUNDARY —</p> <p>— FLOW DIRECTION —</p>			

APPENDIX B
EMERGENCY RESPONSE DAY REPORTS
&
PHOTO LOG

DAILY FIELD REPORT

Project: Emergency Response – C6 Zero

Date: 12/13/2022

Author: Cameron P. Lahn

Timeline:

- Arrival: 9:30 AM (Evan Del Val), 10:15 AM (Cameron Lahn)
- Departure from site: 1:30 PM

Weather Conditions:

- Arrival: 8:52 AM - 32° Overcast (No rain)
- 12:52 PM - 33° Overcast (No rain)
- 3:52 PM - 34° Overcast (No rain)

Activities:

- Kenny (HWMI) arrived on site with two (2) vac trucks and another personnel (2 total) around 10 AM.
- Frac tank arrived on-site around 10:30 AM.
- HWMI started by vacuuming the western pad. Once the western pad was substantially pumped (~1 in water remaining), Kenny started pumping water from pad to the north.
- A total of 4.75 full loads of free product/water was pumped into the frac tank on-site. 11,000 gallons was pumped into the frac tank (61.5 inches).
- HWMI was not confident about pumping free product from the eastern pad due to sludge-like (viscous) consistency.
- Kenny and HWMI were off-site at 3:00 PM
- 10 amber vials and six (6) 40-ml vials of free product were collected from the frac tank using a bailer and twine.
- Soil samples were collected from areas next to the eastern and western pad that were heavily impacted to the naked eye.

Looking Ahead:

- Solidification of eastern pad free product

Notes:

- N/A

DAILY FIELD REPORT

Project: Emergency Response – C6 Zero

Date: December 14, 2022

Author: Evan Del Val

Timeline:

- Arrival: 9:45 AM
- Departure from site: 6:00 PM

Weather Conditions:

- 10:30 AM - 46° Overcast (No rain)
- 2:30 PM - 45° Partly Cloudy
- 4:15 PM - 41° Cloudy

Activities:

- 9:15 – Roto Rooter arrives onsite with a 3600 gallon pump truck (Dave and Matt)
- 10:15 – Roto Rooter begins pumping water from the large containment on the east side of the building
 - C6 Zero personnel are relocating debris and loose equipment from the easternmost paved staging area
- 10:30 – Vac. tank filled – Load 1
- 11:00 – Vac. tank emptied
- 11:15 – Begin vac. operations on the north side of the building and then move back to east side. Jason with Kinzenbaw begins to spread sand on the north side of building
- 11:43 – Spreading of sand on the north side of the building is completed.
- 11:56 – East containment area vac. completed
 - Roto rooter moving to the waterways on the east side of the building
- 12:40 – Vac. tank filled – Load 2
- 1:22 – Kinzenbaw begins to spread sand on the east side of the building
- 2:06 – Vac. tank filled – Load 3
- 2:27 – Vac. tank emptied. Frac tank #1 filled (approximately 21,000 gallons)
- 3:00 – Frac tank #2 arrives on site from Rain for Rent
- 3:50 – Vac. truck filled – Load 4
 - This load consisted entirely of the slurry from the east staging area
 - Kinzenbaw helped move slurry with skid steer.
- 4:30 – Kinzenbaw finished sanding the loading dock area east of the building
- 4:53 – Vac. truck unloaded

- 6:00 – Vac. truck cleaned and loaded. Site closed.

Looking Ahead:

- HWMI vac truck will be on-site at 8:45 to begin collecting free standing water in the eastern waterways.
- Lay tarps/plastic on the southeast staging area for soil stockpiling.

Notes:

- 4 loads of product vacuumed up
- Approximately 10,200 gallons
- Evan purchased three tarps for laydown area for soil
- DNR personnel visited the site, but Evan did not interact much.

DAILY FIELD REPORT

Project: Emergency Response – C6 Zero

Date: December 15, 2022

Author: Evan Del Val

Timeline:

- Arrival: 9:15 AM
- Departure from site: 11:10 PM

Weather Conditions:

- Arrival: 9:15 AM - 31° Breezy and flurries

Activities:

- 9:15 – HWMI on-site (Kenny Davenport) with one 3600 gallon vac. truck. Vac. truck working on the southeast pad. Kinzenbaw on site moving sand along the drive aisle.
- 11:10 – HWMI continues to pump water. Kinzenbaw left site for 30 minutes.
- 12:39 – Kenny texted that he's getting close to the second load on the vac. truck.
- 2:45 – Kenny texted that he finished up pumping on-site. Approximately 5500 gallons into the frack tank.

Looking Ahead:

- Phase 1 is completed. Waiting on additional funding to move into the soil removal.
- Heard from the Iowa DNR that there are positive results from testing in downstream waterways and City detention basin.
- Waiting on Eurofins results from the frack tank samples. Will determine disposal following that.
- Call with the City of Marengo officials scheduled for Monday, December 19, 2022.

Notes:

- N/A



PHOTO 1 – SAND BERM AROUND DOCK AREA – EAST OF BUILDING LOOKING SOUTH



PHOTO 2 – SAND BERM IN DRAINAGE WAY

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 3 – FREE PRODUCT IN CONCRETE STAGING AREA EAST OF BUILDING



PHOTO 4 – CONTAMINATED DRAINAGE WAY EAST OF BUILDING

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 5 – CONTAMINATED GRASS, NORTH OF BUILDING



PHOTO 6 – VAC TRUCK COLLECTING PRODUCT, DOCK AREA – FIREFIGHTING FOAM DRUMS

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 7 – VAC TRUCK DISCHARGING INTO FRACK TANK



PHOTO 8 – CONTAINMENT AREA OF FREE PRODUCT IN DOCK AREA

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 9 - CONCRETE STAGING AREA, EAST OF DOCK AREA



PHOTO 10 – TOTE WITH WASTE PRODUCT

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 11 – PRODUCT IN DRAINAGE WAY (LOOKING NORTH)



PHOTO 12 – SAND BEING LAID DOWN IN DOCK AREA FOLLOWING COLLECTION

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 13 – SAND BEING LAID DOWN IN DOCK AREA, EAST OF BUILDING



PHOTO 14 – LAYER OF SAND AT DOCK AREA NORTH OF BUILDING

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 15 – SAND LAID DOWN ON ROADWAY EAST OF BUILDING



PHOTO 16 – PLASTIC COVERING FOR STAGING OF SOLIDS EAST OF BUILDING

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B



PHOTO 17 – COLLECTION OF PRODUCT IN DRAINAGE WAYS



PHOTO 18 – SAND BEING ADDED TO SLUDGE NEAR STAGING AREA, EAST OF THE BUILDING

SITE PHOTOGRAPHS

C6 ZERO
810 E. SOUTH ST., MARENGO, IA 52301
PROJECT NO.: 23001
PICTURE DATE: DECEMBER, 2022



6424 University Ave
Windsor Heights, Iowa 50324
Phone: 515.250.6695 -
www.ecosourceiowa.com

APPENDIX

B

APPENDIX C

LAB RESULTS

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Darren Fife
EcoSource LLC
6424 University Avenue
Windsor Heights, Iowa 50324

Generated 12/21/2022 3:59:57 PM

JOB DESCRIPTION

Marengo-water

JOB NUMBER

310-246520-1

Eurofins Cedar Falls

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
12/21/2022 3:59:57 PM

Authorized for release by
Brian Graettinger, Business Unit Manager
Brian.Graettinger@et.eurofinsus.com
Designee for
Zach Bindert, Project Manager I
Zach.Bindert@et.eurofinsus.com
(319)277-2401



Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Sample Summary	6
Detection Summary	7
Client Sample Results	8
Definitions	14
Surrogate Summary	16
QC Sample Results	20
QC Association	39
Chronicle	43
Certification Summary	44
Method Summary	45
Chain of Custody	46
Receipt Checklists	48

Case Narrative

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Job ID: 310-246520-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-246520-1

Comments

No additional comments.

Receipt

The sample was received on 12/14/2022 4:10 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1° C.

Receipt Exceptions

Method 9040C: Sample Frac tank (310-246520-1) was unable to be run on the pH meter do to the matrix.

GC/MS VOA

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: Frac tank (310-246520-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The following volatiles sample was diluted due to foaming at the time of purging during sample preparation: Frac tank (310-246520-1). Elevated reporting limits (RLs) are provided.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-375349 recovered above the upper control limit for Carbon tetrachloride (-21.4%D), 1,2-Dichloroethane (-28.9%D), and Tetrachloroethene (-20.2%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-375349/3).

Method 8260D: The method blank for analytical batch 375342 contained cis-1,2-Dichloroethene above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270E: The following sample was diluted due to the nature of the sample matrix: Frac tank (310-246520-1). Elevated reporting limits (RLs) are provided.

Method 8270E: Surrogate recovery for the following sample was outside control limits: Frac tank (310-246520-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 310-375147 and analytical batch 310-375184 recovered outside control limits for the following analytes: Pyridine.

Method 8270E SIM: The following sample was diluted due to the nature of the sample matrix: Frac tank (310-246520-1). Elevated reporting limits (RLs) are provided.

Method 8270E SIM: Surrogate recovery for the following sample was outside control limits: Frac tank (310-246520-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8082A: Surrogate recovery for the following sample was outside control limits: Frac tank (310-246520-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Job ID: 310-246520-1 (Continued)

Laboratory: Eurofins Cedar Falls (Continued)

Metals

Method 3005A: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: Frac tank (310-246520-1). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 3005A: Due to the difficult matrix of the sample, only 10 mL was digested. Frac tank (310-246520-1)

Method 3010A: Due to the difficult matrix of the sample, on 10 mL was digested. Frac tank (310-246520-1) and (310-246520-J-1-A MS)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method 1311: 8270 E - The following samples were miscible in laboratory extraction solvent; therefore, the sample was diluted and analyzed. Elevated reporting limits have been reported. Frac tank (310-246520-1)

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-374981 and 310-375147. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 3510C: The following sample was diluted due to the nature of the sample matrix: Frac tank (310-246520-1). Elevated reporting limits (RLs) are provided.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-374857. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-374881. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Methods 3510C, 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-374942. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Methods 3510C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-374982. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-246520-1	Frac tank	Stormwater	12/13/22 15:00	12/14/22 16:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	74.5	J B	100	21.0	ug/L	100		8260D	Total/NA
Ethylbenzene	60.3	J	100	31.0	ug/L	100		8260D	Total/NA
Isopropylbenzene	2050		100	35.0	ug/L	100		8260D	Total/NA
n-Butylbenzene	1320		100	44.0	ug/L	100		8260D	Total/NA
n-Propylbenzene	7680		100	39.0	ug/L	100		8260D	Total/NA
p-Isopropyltoluene	420		100	33.0	ug/L	100		8260D	Total/NA
Tetrachloroethene	80.5	J	100	48.0	ug/L	100		8260D	Total/NA
1,2,4-Trimethylbenzene	91500		1000	420	ug/L	1000		8260D	Total/NA
1,3,5-Trimethylbenzene	19200		100	37.0	ug/L	100		8260D	Total/NA
Xylenes, Total	2540		300	40.0	ug/L	100		8260D	Total/NA
Acenaphthene	7910	J	10000	2450	ug/L	1000		8270E SIM	Total/NA
Acenaphthylene	6200	J	10000	3150	ug/L	1000		8270E SIM	Total/NA
Anthracene	3800	J	10000	3050	ug/L	1000		8270E SIM	Total/NA
Fluorene	8390	J	10000	1950	ug/L	1000		8270E SIM	Total/NA
2-Methylnaphthalene	60700	B	10000	4000	ug/L	1000		8270E SIM	Total/NA
Naphthalene	26400		25000	10000	ug/L	1000		8270E SIM	Total/NA
Phenanthrene	15500		10000	4350	ug/L	1000		8270E SIM	Total/NA
Pyrene	12900		10000	5500	ug/L	1000		8270E SIM	Total/NA
2-Methylnaphthalene	10800	J	12500	738	ug/L	100		8270E	Total/NA
Diesel	23700000		150000		ug/L	50		OA-2	Total/NA
Waste Oil	6450000		30000		ug/L	10		OA-2	Total/NA
Arsenic	0.00549	J	0.0100	0.00375	mg/L	1		6020B	Total/NA
Barium	0.0896		0.0100	0.00440	mg/L	1		6020B	Total/NA
Cadmium	0.00102		0.000500	0.000275	mg/L	1		6020B	Total/NA
Chromium	0.00788	J	0.0250	0.00550	mg/L	1		6020B	Total/NA
Lead	0.0461		0.00250	0.00120	mg/L	1		6020B	Total/NA
Selenium	0.00939	J	0.0250	0.00480	mg/L	1		6020B	Total/NA
Silver	0.00472	J	0.00500	0.00245	mg/L	1		6020B	Total/NA
Flashpoint	152		65.0		Degrees F	1		D93_85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<310		1000	310	ug/L			12/21/22 09:46	100
Benzene	<22.0		50.0	22.0	ug/L			12/21/22 09:46	100
Bromobenzene	<34.0		100	34.0	ug/L			12/21/22 09:46	100
Bromochloromethane	<54.0		500	54.0	ug/L			12/21/22 09:46	100
Bromodichloromethane	<39.0		100	39.0	ug/L			12/21/22 09:46	100
Bromoform	<78.0		500	78.0	ug/L			12/21/22 09:46	100
Bromomethane	<110		400	110	ug/L			12/21/22 09:46	100
2-Butanone (MEK)	<210		1000	210	ug/L			12/21/22 09:46	100
Carbon disulfide	<45.0		100	45.0	ug/L			12/21/22 09:46	100
Carbon tetrachloride	<65.0		200	65.0	ug/L			12/21/22 09:46	100
Chlorobenzene	<40.0		100	40.0	ug/L			12/21/22 09:46	100
Chlorodibromomethane	<75.0		500	75.0	ug/L			12/21/22 09:46	100
Chloroethane	<79.0		400	79.0	ug/L			12/21/22 09:46	100
Chloroform	<130		300	130	ug/L			12/21/22 09:46	100
Chloromethane	<61.0		300	61.0	ug/L			12/21/22 09:46	100
2-Chlorotoluene	<28.0		100	28.0	ug/L			12/21/22 09:46	100
4-Chlorotoluene	<29.0		100	29.0	ug/L			12/21/22 09:46	100
cis-1,2-Dichloroethene	74.5	J B	100	21.0	ug/L			12/21/22 09:46	100
cis-1,3-Dichloropropene	<25.0		500	25.0	ug/L			12/21/22 09:46	100
1,2-Dibromo-3-chloropropane	<120		500	120	ug/L			12/21/22 09:46	100
1,2-Dibromoethane (EDB)	<34.0		100	34.0	ug/L			12/21/22 09:46	100
Dibromomethane	<33.0		100	33.0	ug/L			12/21/22 09:46	100
1,2-Dichlorobenzene	<37.0		100	37.0	ug/L			12/21/22 09:46	100
1,3-Dichlorobenzene	<30.0		100	30.0	ug/L			12/21/22 09:46	100
1,4-Dichlorobenzene	<23.0		100	23.0	ug/L			12/21/22 09:46	100
Dichlorodifluoromethane	<25.0		300	25.0	ug/L			12/21/22 09:46	100
1,1-Dichloroethane	<22.0		100	22.0	ug/L			12/21/22 09:46	100
1,2-Dichloroethane	<39.0		100	39.0	ug/L			12/21/22 09:46	100
1,1-Dichloroethene	<56.0		200	56.0	ug/L			12/21/22 09:46	100
1,2-Dichloropropane	<27.0		100	27.0	ug/L			12/21/22 09:46	100
1,3-Dichloropropane	<40.0		100	40.0	ug/L			12/21/22 09:46	100
2,2-Dichloropropane	<69.0		400	69.0	ug/L			12/21/22 09:46	100
1,1-Dichloropropene	<43.0		100	43.0	ug/L			12/21/22 09:46	100
Ethylbenzene	60.3	J	100	31.0	ug/L			12/21/22 09:46	100
Hexachlorobutadiene	<140		500	140	ug/L			12/21/22 09:46	100
Hexane	<78.0		100	78.0	ug/L			12/21/22 09:46	100
Isopropylbenzene	2050		100	35.0	ug/L			12/21/22 09:46	100
Methylene chloride	<170		500	170	ug/L			12/21/22 09:46	100
Methyl tert-butyl ether	<49.0		100	49.0	ug/L			12/21/22 09:46	100
Naphthalene	<300		500	300	ug/L			12/21/22 09:46	100
n-Butylbenzene	1320		100	44.0	ug/L			12/21/22 09:46	100
n-Propylbenzene	7680		100	39.0	ug/L			12/21/22 09:46	100
p-Isopropyltoluene	420		100	33.0	ug/L			12/21/22 09:46	100
sec-Butylbenzene	<44.0		100	44.0	ug/L			12/21/22 09:46	100
Styrene	<37.0		100	37.0	ug/L			12/21/22 09:46	100
tert-Butylbenzene	<39.0		100	39.0	ug/L			12/21/22 09:46	100
1,1,1,2-Tetrachloroethane	<38.0		100	38.0	ug/L			12/21/22 09:46	100
1,1,2,2-Tetrachloroethane	<47.0		100	47.0	ug/L			12/21/22 09:46	100

Eurofins Cedar Falls

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	80.5	J	100	48.0	ug/L			12/21/22 09:46	100
Toluene	<43.0		100	43.0	ug/L			12/21/22 09:46	100
trans-1,2-Dichloroethene	<27.0		100	27.0	ug/L			12/21/22 09:46	100
trans-1,3-Dichloropropene	<56.0		500	56.0	ug/L			12/21/22 09:46	100
1,2,3-Trichlorobenzene	<90.0		500	90.0	ug/L			12/21/22 09:46	100
1,2,4-Trichlorobenzene	<75.0		500	75.0	ug/L			12/21/22 09:46	100
1,1,1-Trichloroethane	<19.0		100	19.0	ug/L			12/21/22 09:46	100
1,1,2-Trichloroethane	<45.0		100	45.0	ug/L			12/21/22 09:46	100
Trichloroethene	<43.0		100	43.0	ug/L			12/21/22 09:46	100
Trichlorofluoromethane	<38.0		400	38.0	ug/L			12/21/22 09:46	100
1,2,3-Trichloropropane	<59.0		100	59.0	ug/L			12/21/22 09:46	100
1,2,4-Trimethylbenzene	91500		1000	420	ug/L			12/21/22 13:56	1000
1,3,5-Trimethylbenzene	19200		100	37.0	ug/L			12/21/22 09:46	100
Vinyl chloride	<18.0		100	18.0	ug/L			12/21/22 09:46	100
Xylenes, Total	2540		300	40.0	ug/L			12/21/22 09:46	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		12/21/22 09:46	100
4-Bromofluorobenzene (Surr)	102		80 - 120		12/21/22 13:56	1000
Dibromofluoromethane (Surr)	112		80 - 128		12/21/22 09:46	100
Dibromofluoromethane (Surr)	109		80 - 128		12/21/22 13:56	1000
Toluene-d8 (Surr)	96		80 - 120		12/21/22 09:46	100
Toluene-d8 (Surr)	97		80 - 120		12/21/22 13:56	1000

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.280		2.00	0.280	mg/L			12/21/22 03:52	400
2-Butanone (MEK)	<30.0		100	30.0	mg/L			12/21/22 03:52	400
Carbon tetrachloride	<0.260		2.00	0.260	mg/L			12/21/22 03:52	400
Chlorobenzene	<0.240		2.00	0.240	mg/L			12/21/22 03:52	400
Chloroform	<0.720		2.00	0.720	mg/L			12/21/22 03:52	400
1,2-Dichloroethane	<0.200		2.00	0.200	mg/L			12/21/22 03:52	400
1,1-Dichloroethene	<0.220		2.00	0.220	mg/L			12/21/22 03:52	400
Tetrachloroethene	<1.74		4.00	1.74	mg/L			12/21/22 03:52	400
Trichloroethene	<1.64		4.00	1.64	mg/L			12/21/22 03:52	400
Vinyl chloride	<0.380		2.00	0.380	mg/L			12/21/22 03:52	400

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 121		12/21/22 03:52	400
Dibromofluoromethane (Surr)	122	S1+	80 - 121		12/21/22 03:52	400
Toluene-d8 (Surr)	100		80 - 120		12/21/22 03:52	400

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	7910	J	10000	2450	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Acenaphthylene	6200	J	10000	3150	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Anthracene	3800	J	10000	3050	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Benzo(a)anthracene	<4300		10000	4300	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Benzo(a)pyrene	<6000		10000	6000	ug/L		12/15/22 08:33	12/15/22 23:23	1000

Eurofins Cedar Falls

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo(b)fluoranthene	<5000		10000	5000	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Benzo(g,h,i)perylene	<6000		10000	6000	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Benzo(k)fluoranthene	<5500		10000	5500	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Chrysene	<3650		10000	3650	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Dibenz(a,h)anthracene	<6500		10000	6500	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Fluoranthene	<6500		10000	6500	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Fluorene	8390	J	10000	1950	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Indeno(1,2,3-cd)pyrene	<5500		10000	5500	ug/L		12/15/22 08:33	12/15/22 23:23	1000
2-Methylnaphthalene	60700	B	10000	4000	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Naphthalene	26400		25000	10000	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Phenanthrene	15500		10000	4350	ug/L		12/15/22 08:33	12/15/22 23:23	1000
Pyrene	12900		10000	5500	ug/L		12/15/22 08:33	12/15/22 23:23	1000

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	4776	S1+	21 - 110				12/15/22 08:33	12/15/22 23:23	1000
Nitrobenzene-d5 (Surr)	108035	S1+	19 - 110				12/15/22 08:33	12/15/22 23:23	1000
Terphenyl-d14 (Surr)	1579	S1+	16 - 110				12/15/22 08:33	12/15/22 23:23	1000

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benazidine	<1380		25000	1380	ug/L		12/15/22 12:28	12/16/22 21:01	100
Benzoic acid	<21300		125000	21300	ug/L		12/15/22 12:28	12/16/22 21:01	100
Benzyl alcohol	<1630		12500	1630	ug/L		12/15/22 12:28	12/16/22 21:01	100
Bis(2-chloroethoxy)methane	<950		12500	950	ug/L		12/15/22 12:28	12/16/22 21:01	100
Bis(2-chloroethyl)ether	<1030		12500	1030	ug/L		12/15/22 12:28	12/16/22 21:01	100
bis(2-chloroisopropyl) ether	<675		12500	675	ug/L		12/15/22 12:28	12/16/22 21:01	100
Bis(2-ethylhexyl) phthalate	<6880		12500	6880	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Bromophenyl phenyl ether	<875		12500	875	ug/L		12/15/22 12:28	12/16/22 21:01	100
Butyl benzyl phthalate	<6750		12500	6750	ug/L		12/15/22 12:28	12/16/22 21:01	100
Carbazole	<1250		12500	1250	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Chloroaniline	<775		12500	775	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Chloro-3-methylphenol	<1050		12500	1050	ug/L		12/15/22 12:28	12/16/22 21:01	100
2-Chloronaphthalene	<800		12500	800	ug/L		12/15/22 12:28	12/16/22 21:01	100
2-Chlorophenol	<675		12500	675	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Chlorophenyl phenyl ether	<863		12500	863	ug/L		12/15/22 12:28	12/16/22 21:01	100
Dibenz(a,h)anthracene	<4880		12500	4880	ug/L		12/15/22 12:28	12/16/22 21:01	100
Dibenzofuran	<925		12500	925	ug/L		12/15/22 12:28	12/16/22 21:01	100
1,2-Dichlorobenzene	<775		12500	775	ug/L		12/15/22 12:28	12/16/22 21:01	100
1,3-Dichlorobenzene	<800		12500	800	ug/L		12/15/22 12:28	12/16/22 21:01	100
1,4-Dichlorobenzene	<800		12500	800	ug/L		12/15/22 12:28	12/16/22 21:01	100
3,3'-Dichlorobenzidine	<1750		12500	1750	ug/L		12/15/22 12:28	12/16/22 21:01	100
2,4-Dichlorophenol	<1060		12500	1060	ug/L		12/15/22 12:28	12/16/22 21:01	100
Diethyl phthalate	<2130		12500	2130	ug/L		12/15/22 12:28	12/16/22 21:01	100
2,4-Dimethylphenol	<725		12500	725	ug/L		12/15/22 12:28	12/16/22 21:01	100
Dimethyl phthalate	<1250		12500	1250	ug/L		12/15/22 12:28	12/16/22 21:01	100
Di-n-butyl phthalate	<7000		12500	7000	ug/L		12/15/22 12:28	12/16/22 21:01	100
4,6-Dinitro-2-methylphenol	<8630		12500	8630	ug/L		12/15/22 12:28	12/16/22 21:01	100
2,4-Dinitrophenol	<16300		25000	16300	ug/L		12/15/22 12:28	12/16/22 21:01	100
2,4-Dinitrotoluene	<8000		12500	8000	ug/L		12/15/22 12:28	12/16/22 21:01	100

Eurofins Cedar Falls

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,6-Dinitrotoluene	<650		12500	650	ug/L		12/15/22 12:28	12/16/22 21:01	100
Di-n-octyl phthalate	<8750		25000	8750	ug/L		12/15/22 12:28	12/16/22 21:01	100
Hexachlorobenzene	<875		12500	875	ug/L		12/15/22 12:28	12/16/22 21:01	100
Hexachlorobutadiene	<1080		12500	1080	ug/L		12/15/22 12:28	12/16/22 21:01	100
Hexachlorocyclopentadiene	<6380		12500	6380	ug/L		12/15/22 12:28	12/16/22 21:01	100
Hexachloroethane	<1210		12500	1210	ug/L		12/15/22 12:28	12/16/22 21:01	100
Isophorone	<1160		12500	1160	ug/L		12/15/22 12:28	12/16/22 21:01	100
2-Methylnaphthalene	10800	J	12500	738	ug/L		12/15/22 12:28	12/16/22 21:01	100
2-Methylphenol	<813		12500	813	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Methylphenol (and/or 3-Methylphenol)	<875		12500	875	ug/L		12/15/22 12:28	12/16/22 21:01	100
2-Nitroaniline	<7380		12500	7380	ug/L		12/15/22 12:28	12/16/22 21:01	100
3-Nitroaniline	<3380		12500	3380	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Nitroaniline	<1630		12500	1630	ug/L		12/15/22 12:28	12/16/22 21:01	100
Nitrobenzene	<1000		12500	1000	ug/L		12/15/22 12:28	12/16/22 21:01	100
2-Nitrophenol	<8500		12500	8500	ug/L		12/15/22 12:28	12/16/22 21:01	100
4-Nitrophenol	<9500		12500	9500	ug/L		12/15/22 12:28	12/16/22 21:01	100
N-Nitrosodimethylamine	<900		12500	900	ug/L		12/15/22 12:28	12/16/22 21:01	100
N-Nitrosodi-n-propylamine	<1150		12500	1150	ug/L		12/15/22 12:28	12/16/22 21:01	100
N-Nitrosodiphenylamine	<938		12500	938	ug/L		12/15/22 12:28	12/16/22 21:01	100
Pentachlorophenol	<12000		12500	12000	ug/L		12/15/22 12:28	12/16/22 21:01	100
Phenol	<1380		12500	1380	ug/L		12/15/22 12:28	12/16/22 21:01	100
Pyridine	<2000		12500	2000	ug/L		12/15/22 12:28	12/16/22 21:01	100
Total Cresols	<875		12500	875	ug/L		12/15/22 12:28	12/16/22 21:01	100
1,2,4-Trichlorobenzene	<700		12500	700	ug/L		12/15/22 12:28	12/16/22 21:01	100
2,4,5-Trichlorophenol	<6630		12500	6630	ug/L		12/15/22 12:28	12/16/22 21:01	100
2,4,6-Trichlorophenol	<6250		12500	6250	ug/L		12/15/22 12:28	12/16/22 21:01	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	194	S1+	28 - 110	12/15/22 12:28	12/16/22 21:01	100
2-Fluorophenol (Surr)	93		13 - 110	12/15/22 12:28	12/16/22 21:01	100
Nitrobenzene-d5 (Surr)	1652	S1+	27 - 115	12/15/22 12:28	12/16/22 21:01	100
Phenol-d5 (Surr)	206	S1+	12 - 110	12/15/22 12:28	12/16/22 21:01	100
Terphenyl-d14 (Surr)	187	S1+	10 - 125	12/15/22 12:28	12/16/22 21:01	100
2,4,6-Tribromophenol (Surr)	121		15 - 121	12/15/22 12:28	12/16/22 21:01	100

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.130		1.00	0.130	mg/L		12/19/22 08:12	12/19/22 14:34	10
2,4-Dinitrotoluene	<0.108		1.00	0.108	mg/L		12/19/22 08:12	12/19/22 14:34	10
Hexachlorobenzene	<0.138		1.00	0.138	mg/L		12/19/22 08:12	12/19/22 14:34	10
Hexachlorobutadiene	<0.120		1.00	0.120	mg/L		12/19/22 08:12	12/19/22 14:34	10
Hexachloroethane	<0.128		1.00	0.128	mg/L		12/19/22 08:12	12/19/22 14:34	10
2-Methylphenol	<0.100		1.00	0.100	mg/L		12/19/22 08:12	12/19/22 14:34	10
4-Methylphenol (and/or 3-Methylphenol)	<0.0760		1.00	0.0760	mg/L		12/19/22 08:12	12/19/22 14:34	10
Nitrobenzene	<0.106		1.00	0.106	mg/L		12/19/22 08:12	12/19/22 14:34	10
Pentachlorophenol	<0.300		1.00	0.300	mg/L		12/19/22 08:12	12/19/22 14:34	10
Pyridine	<0.148	*1	1.00	0.148	mg/L		12/19/22 08:12	12/19/22 14:34	10

Eurofins Cedar Falls

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Cresols	<0.100		1.00	0.100	mg/L		12/19/22 08:12	12/19/22 14:34	10
2,4,5-Trichlorophenol	<0.106		1.00	0.106	mg/L		12/19/22 08:12	12/19/22 14:34	10
2,4,6-Trichlorophenol	<0.118		1.00	0.118	mg/L		12/19/22 08:12	12/19/22 14:34	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	43		30 - 110	12/19/22 08:12	12/19/22 14:34	10
2-Fluorophenol (Surr)	31		13 - 110	12/19/22 08:12	12/19/22 14:34	10
Nitrobenzene-d5 (Surr)	132	S1+	32 - 113	12/19/22 08:12	12/19/22 14:34	10
Phenol-d5 (Surr)	22		18 - 110	12/19/22 08:12	12/19/22 14:34	10
Terphenyl-d14 (Surr)	33		33 - 120	12/19/22 08:12	12/19/22 14:34	10
2,4,6-Tribromophenol (Surr)	28		11 - 130	12/19/22 08:12	12/19/22 14:34	10

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<47.6		224	47.6	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1221	<47.6		224	47.6	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1232	<47.6		224	47.6	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1242	<47.6		224	47.6	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1248	<30.8		224	30.8	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1254	<30.8		224	30.8	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1260	<30.8		224	30.8	ug/L		12/16/22 07:05	12/21/22 09:24	20
PCB-1268	<30.8		224	30.8	ug/L		12/16/22 07:05	12/21/22 09:24	20
Polychlorinated biphenyls, Total	<47.6		224	47.6	ug/L		12/16/22 07:05	12/21/22 09:24	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	0	S1-	10 - 110	12/16/22 07:05	12/21/22 09:24	20
Tetrachloro-m-xylene (Surr)	138	S1+	13 - 110	12/16/22 07:05	12/21/22 09:24	20

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<3000		3000		ug/L		12/15/22 07:10	12/19/22 16:38	1
Diesel	23700000		150000		ug/L		12/15/22 07:10	12/20/22 12:10	50
Waste Oil	6450000		30000		ug/L		12/15/22 07:10	12/20/22 12:39	10
Total Extractable Hydrocarbons	<5000		5000		ug/L		12/15/22 07:10	12/19/22 16:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	77		17 - 120	12/15/22 07:10	12/19/22 16:38	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.500		1.00	0.500	mg/L		12/16/22 09:00	12/16/22 18:19	1
Barium	<0.550		2.50	0.550	mg/L		12/16/22 09:00	12/16/22 18:19	1
Cadmium	<0.0390		0.100	0.0390	mg/L		12/16/22 09:00	12/16/22 18:19	1
Chromium	<0.0435		0.100	0.0435	mg/L		12/16/22 09:00	12/16/22 18:19	1
Lead	<0.250		0.500	0.250	mg/L		12/16/22 09:00	12/16/22 18:19	1
Selenium	<0.335		0.500	0.335	mg/L		12/16/22 09:00	12/16/22 18:19	1
Silver	<0.0470		0.100	0.0470	mg/L		12/16/22 09:00	12/16/22 18:19	1

Eurofins Cedar Falls

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00549	J	0.0100	0.00375	mg/L		12/19/22 08:45	12/19/22 15:52	1
Barium	0.0896		0.0100	0.00440	mg/L		12/19/22 08:45	12/19/22 15:52	1
Cadmium	0.00102		0.000500	0.000275	mg/L		12/19/22 08:45	12/19/22 15:52	1
Chromium	0.00788	J	0.0250	0.00550	mg/L		12/19/22 08:45	12/19/22 15:52	1
Lead	0.0461		0.00250	0.00120	mg/L		12/19/22 08:45	12/19/22 15:52	1
Selenium	0.00939	J	0.0250	0.00480	mg/L		12/19/22 08:45	12/19/22 15:52	1
Silver	0.00472	J	0.00500	0.00245	mg/L		12/19/22 08:45	12/19/22 15:52	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000330		0.000600	0.000330	mg/L		12/20/22 14:01	12/21/22 11:12	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00120		0.00200	0.00120	mg/L		12/16/22 11:34	12/16/22 16:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint (ASTM D93_85)	152		65.0		Degrees F			12/17/22 12:19	1

Definitions/Glossary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Eurofins Cedar Falls

Definitions/Glossary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Surrogate Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Stormwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (80-128)	TOL (80-120)
310-246520-1	Frac tank	100	112	96
310-246520-1	Frac tank	102	109	97

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Stormwater

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-121)	DBFM (80-121)	TOL (80-120)
310-246520-1	Frac tank	101	122 S1+	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (80-128)	TOL (80-120)
LCS 310-375342/6	Lab Control Sample	102	95	100
LCS 310-375342/7	Lab Control Sample	103	109	97
LCS 310-375344/6	Lab Control Sample	103	95	100
LCS 310-375344/7	Lab Control Sample	100	108	97
MB 310-375342/5	Method Blank	103	109	99
MB 310-375344/5	Method Blank	101	110	97

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-121)	DBFM (80-121)	TOL (80-120)
LB 310-375288/1-A	Method Blank	100	121	101
LCS 310-375288/2-A	Lab Control Sample	98	89	104

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Eurofins Cedar Falls

Surrogate Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Stormwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (28-110)	2FP (13-110)	NBZ (27-115)	PHL (12-110)	TPHL (10-125)	TBP (15-121)
310-246520-1	Frac tank	194 S1+	93	1652 S1+	206 S1+	187 S1+	121
Surrogate Legend							
FBP = 2-Fluorobiphenyl (Surr)							
2FP = 2-Fluorophenol (Surr)							
NBZ = Nitrobenzene-d5 (Surr)							
PHL = Phenol-d5 (Surr)							
TPHL = Terphenyl-d14 (Surr)							
TBP = 2,4,6-Tribromophenol (Surr)							

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Stormwater

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (30-110)	2FP (13-110)	NBZ (32-113)	PHL (18-110)	TPHL (33-120)	TBP (11-130)
310-246520-1	Frac tank	43	31	132 S1+	22	33	28
Surrogate Legend							
FBP = 2-Fluorobiphenyl (Surr)							
2FP = 2-Fluorophenol (Surr)							
NBZ = Nitrobenzene-d5 (Surr)							
PHL = Phenol-d5 (Surr)							
TPHL = Terphenyl-d14 (Surr)							
TBP = 2,4,6-Tribromophenol (Surr)							

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (28-110)	2FP (13-110)	NBZ (27-115)	PHL (12-110)	TPHL (10-125)	TBP (15-121)
LCS 310-374942/2-A	Lab Control Sample	92	75	93	60	108	94
LCSD 310-374942/3-A	Lab Control Sample Dup	79	64	77	53	88	80
MB 310-374942/1-A	Method Blank	92	75	91	60	106	89
Surrogate Legend							
FBP = 2-Fluorobiphenyl (Surr)							
2FP = 2-Fluorophenol (Surr)							
NBZ = Nitrobenzene-d5 (Surr)							
PHL = Phenol-d5 (Surr)							
TPHL = Terphenyl-d14 (Surr)							
TBP = 2,4,6-Tribromophenol (Surr)							

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (30-110)	2FP (13-110)	NBZ (32-113)	PHL (18-110)	TPHL (33-120)	TBP (11-130)
LCS 310-375147/2-A	Lab Control Sample	74	63	72	54	65	81
LCSD 310-375147/3-A	Lab Control Sample Dup	66	60	67	53	73	76

Eurofins Cedar Falls

Surrogate Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (30-110)	2FP (13-110)	NBZ (32-113)	PHL (18-110)	TPHL (33-120)	TBP (11-130)
LB 310-374981/1-B	Method Blank	63	56	63	47	76	66

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Stormwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (21-110)	NBZ (19-110)	TPHL (16-110)
310-246520-1	Frac tank	4776 S1+	108035 S1+	1579 S1+

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (21-110)	NBZ (19-110)	TPHL (16-110)
LCS 310-374881/2-A	Lab Control Sample	80	78	98
LCSD 310-374881/3-A	Lab Control Sample Dup	77	76	100
MB 310-374881/1-A	Method Blank	75	78	99

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)

Surrogate Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Stormwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB1 (10-110)	TCX1 (13-110)
310-246520-1	Frac tank	0 S1-	138 S1+
Surrogate Legend			
DCB = DCB Decachlorobiphenyl (Surr)			
TCX = Tetrachloro-m-xylene (Surr)			

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB1 (10-110)	TCX1 (13-110)
LCS 310-374982/2-A	Lab Control Sample	40	50
LCSD 310-374982/3-A	Lab Control Sample Dup	42	58
MB 310-374982/1-A	Method Blank	38	50
Surrogate Legend			
DCB = DCB Decachlorobiphenyl (Surr)			
TCX = Tetrachloro-m-xylene (Surr)			

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Matrix: Stormwater

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTCN (17-120)	
310-246520-1	Frac tank	77	
Surrogate Legend			
OTCN = n-Octacosane			

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTCN (17-120)	
LCS 310-374857/2-A	Lab Control Sample	102	
LCSD 310-374857/3-A	Lab Control Sample Dup	91	
MB 310-374857/1-A	Method Blank	98	
Surrogate Legend			
OTCN = n-Octacosane			

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-375342/5

Matrix: Water

Analysis Batch: 375342

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			12/21/22 00:53	1
Benzene	<0.220		0.500	0.220	ug/L			12/21/22 00:53	1
Bromobenzene	<0.340		1.00	0.340	ug/L			12/21/22 00:53	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/21/22 00:53	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/21/22 00:53	1
Bromoform	<0.780		5.00	0.780	ug/L			12/21/22 00:53	1
Bromomethane	2.443	J	4.00	1.10	ug/L			12/21/22 00:53	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/21/22 00:53	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/21/22 00:53	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/21/22 00:53	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/21/22 00:53	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/21/22 00:53	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/21/22 00:53	1
Chloroform	<1.30		3.00	1.30	ug/L			12/21/22 00:53	1
Chloromethane	2.473	J	3.00	0.610	ug/L			12/21/22 00:53	1
2-Chlorotoluene	<0.280		1.00	0.280	ug/L			12/21/22 00:53	1
4-Chlorotoluene	<0.290		1.00	0.290	ug/L			12/21/22 00:53	1
cis-1,2-Dichloroethene	1.329		1.00	0.210	ug/L			12/21/22 00:53	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/21/22 00:53	1
1,2-Dibromo-3-chloropropane	<1.20		5.00	1.20	ug/L			12/21/22 00:53	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/21/22 00:53	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/21/22 00:53	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/21/22 00:53	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			12/21/22 00:53	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/21/22 00:53	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			12/21/22 00:53	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/21/22 00:53	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/21/22 00:53	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/21/22 00:53	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/21/22 00:53	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			12/21/22 00:53	1
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			12/21/22 00:53	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			12/21/22 00:53	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/21/22 00:53	1
Hexachlorobutadiene	<1.40		5.00	1.40	ug/L			12/21/22 00:53	1
Hexane	<0.780		1.00	0.780	ug/L			12/21/22 00:53	1
Isopropylbenzene	<0.350		1.00	0.350	ug/L			12/21/22 00:53	1
Methylene chloride	<1.70		5.00	1.70	ug/L			12/21/22 00:53	1
Methyl tert-butyl ether	<0.490		1.00	0.490	ug/L			12/21/22 00:53	1
Naphthalene	<3.00		5.00	3.00	ug/L			12/21/22 00:53	1
n-Butylbenzene	<0.440		1.00	0.440	ug/L			12/21/22 00:53	1
n-Propylbenzene	<0.390		1.00	0.390	ug/L			12/21/22 00:53	1
p-Isopropyltoluene	<0.330		1.00	0.330	ug/L			12/21/22 00:53	1
sec-Butylbenzene	<0.440		1.00	0.440	ug/L			12/21/22 00:53	1
Styrene	<0.370		1.00	0.370	ug/L			12/21/22 00:53	1
tert-Butylbenzene	<0.390		1.00	0.390	ug/L			12/21/22 00:53	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/21/22 00:53	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/21/22 00:53	1

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-375342/5

Matrix: Water

Analysis Batch: 375342

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/21/22 00:53	1
Toluene	<0.430		1.00	0.430	ug/L			12/21/22 00:53	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/21/22 00:53	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/21/22 00:53	1
1,2,3-Trichlorobenzene	<0.900		5.00	0.900	ug/L			12/21/22 00:53	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			12/21/22 00:53	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/21/22 00:53	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/21/22 00:53	1
Trichloroethene	<0.430		1.00	0.430	ug/L			12/21/22 00:53	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/21/22 00:53	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/21/22 00:53	1
1,2,4-Trimethylbenzene	<0.420		1.00	0.420	ug/L			12/21/22 00:53	1
1,3,5-Trimethylbenzene	<0.370		1.00	0.370	ug/L			12/21/22 00:53	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/21/22 00:53	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/21/22 00:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		12/21/22 00:53	1
Dibromofluoromethane (Surr)	109		80 - 128		12/21/22 00:53	1
Toluene-d8 (Surr)	99		80 - 120		12/21/22 00:53	1

Lab Sample ID: LCS 310-375342/6

Matrix: Water

Analysis Batch: 375342

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	42.29		ug/L		106	50 - 150
Benzene	20.0	18.81		ug/L		94	73 - 122
Bromobenzene	20.0	20.16		ug/L		101	67 - 124
Bromochloromethane	20.0	22.89		ug/L		114	68 - 132
Bromodichloromethane	20.0	19.29		ug/L		96	72 - 121
Bromoform	20.0	18.79		ug/L		94	55 - 129
2-Butanone (MEK)	40.0	37.93		ug/L		95	50 - 150
Carbon disulfide	20.0	17.33		ug/L		87	58 - 131
Carbon tetrachloride	20.0	20.75		ug/L		104	67 - 132
Chlorobenzene	20.0	19.41		ug/L		97	69 - 121
Chlorodibromomethane	20.0	19.65		ug/L		98	69 - 122
Chloroform	20.0	18.99		ug/L		95	72 - 120
2-Chlorotoluene	20.0	20.25		ug/L		101	66 - 122
4-Chlorotoluene	20.0	20.07		ug/L		100	65 - 122
cis-1,2-Dichloroethene	20.0	20.17		ug/L		101	74 - 120
cis-1,3-Dichloropropene	20.0	19.47		ug/L		97	71 - 126
1,2-Dibromo-3-chloropropane	20.0	19.20		ug/L		96	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.77		ug/L		99	73 - 125
Dibromomethane	20.0	19.39		ug/L		97	72 - 123
1,2-Dichlorobenzene	20.0	20.13		ug/L		101	68 - 120
1,3-Dichlorobenzene	20.0	20.04		ug/L		100	67 - 123
1,4-Dichlorobenzene	20.0	20.01		ug/L		100	67 - 120

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-375342/6

Matrix: Water

Analysis Batch: 375342

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethane	20.0	18.48		ug/L		92	71 - 123
1,2-Dichloroethane	20.0	19.78		ug/L		99	70 - 124
1,1-Dichloroethene	20.0	19.20		ug/L		96	61 - 129
1,2-Dichloropropane	20.0	19.25		ug/L		96	73 - 121
1,3-Dichloropropane	20.0	18.71		ug/L		94	72 - 124
2,2-Dichloropropane	20.0	17.82		ug/L		89	50 - 150
1,1-Dichloropropene	20.0	20.85		ug/L		104	70 - 131
Ethylbenzene	20.0	19.12		ug/L		96	69 - 122
Hexachlorobutadiene	20.0	20.70		ug/L		104	49 - 150
Hexane	20.0	22.24		ug/L		111	35 - 150
Isopropylbenzene	20.0	19.45		ug/L		97	66 - 126
Methylene chloride	20.0	19.57		ug/L		98	50 - 150
Methyl tert-butyl ether	20.0	20.53		ug/L		103	68 - 127
m-Xylene & p-Xylene	20.0	19.09		ug/L		95	68 - 124
Naphthalene	20.0	20.27		ug/L		101	50 - 150
n-Butylbenzene	20.0	20.37		ug/L		102	54 - 138
n-Propylbenzene	20.0	19.41		ug/L		97	65 - 127
o-Xylene	20.0	18.52		ug/L		93	68 - 124
p-Isopropyltoluene	20.0	20.00		ug/L		100	61 - 128
sec-Butylbenzene	20.0	20.02		ug/L		100	62 - 132
Styrene	20.0	20.25		ug/L		101	67 - 125
tert-Butylbenzene	20.0	20.27		ug/L		101	64 - 127
1,1,1,2-Tetrachloroethane	20.0	18.82		ug/L		94	68 - 123
1,1,2,2-Tetrachloroethane	20.0	19.65		ug/L		98	64 - 124
Tetrachloroethene	20.0	21.32		ug/L		107	69 - 131
Toluene	20.0	19.78		ug/L		99	72 - 121
trans-1,2-Dichloroethene	20.0	19.28		ug/L		96	68 - 125
trans-1,3-Dichloropropene	20.0	18.75		ug/L		94	68 - 124
1,2,3-Trichlorobenzene	20.0	20.59		ug/L		103	50 - 150
1,2,4-Trichlorobenzene	20.0	20.34		ug/L		102	61 - 124
1,1,1-Trichloroethane	20.0	20.46		ug/L		102	71 - 128
1,1,2-Trichloroethane	20.0	19.77		ug/L		99	70 - 124
Trichloroethene	20.0	19.93		ug/L		100	73 - 126
1,2,3-Trichloropropane	20.0	20.48		ug/L		102	64 - 125
1,2,4-Trimethylbenzene	20.0	20.08		ug/L		100	65 - 125
1,3,5-Trimethylbenzene	20.0	19.97		ug/L		100	65 - 124
Xylenes, Total	40.0	37.61		ug/L		94	68 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	95		80 - 128
Toluene-d8 (Surr)	100		80 - 120

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-375342/7

Matrix: Water

Analysis Batch: 375342

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	12.66		ug/L		63	24 - 150
Chloroethane	20.0	18.43		ug/L		92	51 - 137
Chloromethane	20.0	18.60		ug/L		93	37 - 150
Dichlorodifluoromethane	20.0	20.51		ug/L		103	37 - 150
Trichlorofluoromethane	20.0	19.89		ug/L		99	56 - 144
Vinyl chloride	20.0	19.16		ug/L		96	57 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	109		80 - 128
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: MB 310-375344/5

Matrix: Water

Analysis Batch: 375344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<3.10		10.0	3.10	ug/L			12/21/22 12:44	1
Benzene	<0.220		0.500	0.220	ug/L			12/21/22 12:44	1
Bromobenzene	<0.340		1.00	0.340	ug/L			12/21/22 12:44	1
Bromochloromethane	<0.540		5.00	0.540	ug/L			12/21/22 12:44	1
Bromodichloromethane	<0.390		1.00	0.390	ug/L			12/21/22 12:44	1
Bromoform	<0.780		5.00	0.780	ug/L			12/21/22 12:44	1
Bromomethane	2.136	J	4.00	1.10	ug/L			12/21/22 12:44	1
2-Butanone (MEK)	<2.10		10.0	2.10	ug/L			12/21/22 12:44	1
Carbon disulfide	<0.450		1.00	0.450	ug/L			12/21/22 12:44	1
Carbon tetrachloride	<0.650		2.00	0.650	ug/L			12/21/22 12:44	1
Chlorobenzene	<0.400		1.00	0.400	ug/L			12/21/22 12:44	1
Chlorodibromomethane	<0.750		5.00	0.750	ug/L			12/21/22 12:44	1
Chloroethane	<0.790		4.00	0.790	ug/L			12/21/22 12:44	1
Chloroform	<1.30		3.00	1.30	ug/L			12/21/22 12:44	1
Chloromethane	2.178	J	3.00	0.610	ug/L			12/21/22 12:44	1
2-Chlorotoluene	<0.280		1.00	0.280	ug/L			12/21/22 12:44	1
4-Chlorotoluene	<0.290		1.00	0.290	ug/L			12/21/22 12:44	1
cis-1,2-Dichloroethene	0.7808	J	1.00	0.210	ug/L			12/21/22 12:44	1
cis-1,3-Dichloropropene	<0.250		5.00	0.250	ug/L			12/21/22 12:44	1
1,2-Dibromo-3-chloropropane	<1.20		5.00	1.20	ug/L			12/21/22 12:44	1
1,2-Dibromoethane (EDB)	<0.340		1.00	0.340	ug/L			12/21/22 12:44	1
Dibromomethane	<0.330		1.00	0.330	ug/L			12/21/22 12:44	1
1,2-Dichlorobenzene	<0.370		1.00	0.370	ug/L			12/21/22 12:44	1
1,3-Dichlorobenzene	<0.300		1.00	0.300	ug/L			12/21/22 12:44	1
1,4-Dichlorobenzene	<0.230		1.00	0.230	ug/L			12/21/22 12:44	1
Dichlorodifluoromethane	<0.250		3.00	0.250	ug/L			12/21/22 12:44	1
1,1-Dichloroethane	<0.220		1.00	0.220	ug/L			12/21/22 12:44	1
1,2-Dichloroethane	<0.390		1.00	0.390	ug/L			12/21/22 12:44	1
1,1-Dichloroethene	<0.560		2.00	0.560	ug/L			12/21/22 12:44	1
1,2-Dichloropropane	<0.270		1.00	0.270	ug/L			12/21/22 12:44	1
1,3-Dichloropropane	<0.400		1.00	0.400	ug/L			12/21/22 12:44	1

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-375344/5

Matrix: Water

Analysis Batch: 375344

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	<0.690		4.00	0.690	ug/L			12/21/22 12:44	1
1,1-Dichloropropene	<0.430		1.00	0.430	ug/L			12/21/22 12:44	1
Ethylbenzene	<0.310		1.00	0.310	ug/L			12/21/22 12:44	1
Hexachlorobutadiene	<1.40		5.00	1.40	ug/L			12/21/22 12:44	1
Hexane	<0.780		1.00	0.780	ug/L			12/21/22 12:44	1
Isopropylbenzene	<0.350		1.00	0.350	ug/L			12/21/22 12:44	1
Methylene chloride	<1.70		5.00	1.70	ug/L			12/21/22 12:44	1
Methyl tert-butyl ether	<0.490		1.00	0.490	ug/L			12/21/22 12:44	1
Naphthalene	<3.00		5.00	3.00	ug/L			12/21/22 12:44	1
n-Butylbenzene	<0.440		1.00	0.440	ug/L			12/21/22 12:44	1
n-Propylbenzene	<0.390		1.00	0.390	ug/L			12/21/22 12:44	1
p-Isopropyltoluene	<0.330		1.00	0.330	ug/L			12/21/22 12:44	1
sec-Butylbenzene	<0.440		1.00	0.440	ug/L			12/21/22 12:44	1
Styrene	<0.370		1.00	0.370	ug/L			12/21/22 12:44	1
tert-Butylbenzene	<0.390		1.00	0.390	ug/L			12/21/22 12:44	1
1,1,1,2-Tetrachloroethane	<0.380		1.00	0.380	ug/L			12/21/22 12:44	1
1,1,2,2-Tetrachloroethane	<0.470		1.00	0.470	ug/L			12/21/22 12:44	1
Tetrachloroethene	<0.480		1.00	0.480	ug/L			12/21/22 12:44	1
Toluene	<0.430		1.00	0.430	ug/L			12/21/22 12:44	1
trans-1,2-Dichloroethene	<0.270		1.00	0.270	ug/L			12/21/22 12:44	1
trans-1,3-Dichloropropene	<0.560		5.00	0.560	ug/L			12/21/22 12:44	1
1,2,3-Trichlorobenzene	<0.900		5.00	0.900	ug/L			12/21/22 12:44	1
1,2,4-Trichlorobenzene	<0.750		5.00	0.750	ug/L			12/21/22 12:44	1
1,1,1-Trichloroethane	<0.190		1.00	0.190	ug/L			12/21/22 12:44	1
1,1,2-Trichloroethane	<0.450		1.00	0.450	ug/L			12/21/22 12:44	1
Trichlorofluoromethane	<0.380		4.00	0.380	ug/L			12/21/22 12:44	1
1,2,3-Trichloropropane	<0.590		1.00	0.590	ug/L			12/21/22 12:44	1
1,2,4-Trimethylbenzene	<0.420		1.00	0.420	ug/L			12/21/22 12:44	1
1,3,5-Trimethylbenzene	<0.370		1.00	0.370	ug/L			12/21/22 12:44	1
Vinyl chloride	<0.180		1.00	0.180	ug/L			12/21/22 12:44	1
Xylenes, Total	<0.400		3.00	0.400	ug/L			12/21/22 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		12/21/22 12:44	1
Dibromofluoromethane (Surr)	110		80 - 128		12/21/22 12:44	1
Toluene-d8 (Surr)	97		80 - 120		12/21/22 12:44	1

Lab Sample ID: LCS 310-375344/6

Matrix: Water

Analysis Batch: 375344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	41.07		ug/L		103	50 - 150
Benzene	20.0	17.92		ug/L		90	73 - 122
Bromobenzene	20.0	19.61		ug/L		98	67 - 124
Bromochloromethane	20.0	22.09		ug/L		110	68 - 132
Bromodichloromethane	20.0	18.50		ug/L		93	72 - 121
Bromoform	20.0	18.07		ug/L		90	55 - 129

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-375344/6

Matrix: Water

Analysis Batch: 375344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	40.0	36.68		ug/L		92	50 - 150
Carbon disulfide	20.0	16.16		ug/L		81	58 - 131
Carbon tetrachloride	20.0	19.29		ug/L		96	67 - 132
Chlorobenzene	20.0	18.69		ug/L		93	69 - 121
Chlorodibromomethane	20.0	19.34		ug/L		97	69 - 122
Chloroform	20.0	18.04		ug/L		90	72 - 120
2-Chlorotoluene	20.0	19.63		ug/L		98	66 - 122
4-Chlorotoluene	20.0	19.57		ug/L		98	65 - 122
cis-1,2-Dichloroethene	20.0	18.84		ug/L		94	74 - 120
cis-1,3-Dichloropropene	20.0	19.28		ug/L		96	71 - 126
1,2-Dibromo-3-chloropropane	20.0	19.07		ug/L		95	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.94		ug/L		95	73 - 125
Dibromomethane	20.0	18.67		ug/L		93	72 - 123
1,2-Dichlorobenzene	20.0	19.69		ug/L		98	68 - 120
1,3-Dichlorobenzene	20.0	20.08		ug/L		100	67 - 123
1,4-Dichlorobenzene	20.0	19.72		ug/L		99	67 - 120
1,1-Dichloroethane	20.0	17.63		ug/L		88	71 - 123
1,2-Dichloroethane	20.0	18.50		ug/L		92	70 - 124
1,1-Dichloroethene	20.0	17.71		ug/L		89	61 - 129
1,2-Dichloropropane	20.0	18.16		ug/L		91	73 - 121
1,3-Dichloropropane	20.0	17.83		ug/L		89	72 - 124
2,2-Dichloropropane	20.0	19.49		ug/L		97	50 - 150
1,1-Dichloropropene	20.0	19.68		ug/L		98	70 - 131
Ethylbenzene	20.0	18.26		ug/L		91	69 - 122
Hexachlorobutadiene	20.0	21.00		ug/L		105	49 - 150
Hexane	20.0	22.93		ug/L		115	35 - 150
Isopropylbenzene	20.0	18.92		ug/L		95	66 - 126
Methylene chloride	20.0	19.06		ug/L		95	50 - 150
Methyl tert-butyl ether	20.0	19.69		ug/L		98	68 - 127
m-Xylene & p-Xylene	20.0	18.23		ug/L		91	68 - 124
Naphthalene	20.0	20.93		ug/L		105	50 - 150
n-Butylbenzene	20.0	20.68		ug/L		103	54 - 138
n-Propylbenzene	20.0	18.93		ug/L		95	65 - 127
o-Xylene	20.0	17.79		ug/L		89	68 - 124
p-Isopropyltoluene	20.0	19.77		ug/L		99	61 - 128
sec-Butylbenzene	20.0	19.89		ug/L		99	62 - 132
Styrene	20.0	19.76		ug/L		99	67 - 125
tert-Butylbenzene	20.0	19.97		ug/L		100	64 - 127
1,1,1,2-Tetrachloroethane	20.0	18.13		ug/L		91	68 - 123
1,1,2,2-Tetrachloroethane	20.0	19.64		ug/L		98	64 - 124
Tetrachloroethene	20.0	20.41		ug/L		102	69 - 131
Toluene	20.0	18.71		ug/L		94	72 - 121
trans-1,2-Dichloroethene	20.0	18.20		ug/L		91	68 - 125
trans-1,3-Dichloropropene	20.0	18.51		ug/L		93	68 - 124
1,2,3-Trichlorobenzene	20.0	21.13		ug/L		106	50 - 150
1,2,4-Trichlorobenzene	20.0	20.31		ug/L		102	61 - 124
1,1,1-Trichloroethane	20.0	19.16		ug/L		96	71 - 128
1,1,2-Trichloroethane	20.0	18.64		ug/L		93	70 - 124
Trichloroethene	20.0	19.75		ug/L		99	73 - 126

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-375344/6

Matrix: Water

Analysis Batch: 375344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	22.57		ug/L		113	64 - 125
1,2,4-Trimethylbenzene	20.0	19.30		ug/L		96	65 - 125
1,3,5-Trimethylbenzene	20.0	19.56		ug/L		98	65 - 124
Xylenes, Total	40.0	36.02		ug/L		90	68 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	95		80 - 128
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCS 310-375344/7

Matrix: Water

Analysis Batch: 375344

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	12.69		ug/L		63	24 - 150
Chloroethane	20.0	19.40		ug/L		97	51 - 137
Chloromethane	20.0	19.61		ug/L		98	37 - 150
Dichlorodifluoromethane	20.0	19.95		ug/L		100	37 - 150
Trichlorofluoromethane	20.0	19.75		ug/L		99	56 - 144
Vinyl chloride	20.0	19.34		ug/L		97	57 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	108		80 - 128
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: LB 310-375288/1-A

Matrix: Water

Analysis Batch: 375349

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.01487	J	0.100	0.0140	mg/L			12/21/22 03:10	20
2-Butanone (MEK)	<1.50		5.00	1.50	mg/L			12/21/22 03:10	20
Carbon tetrachloride	<0.0130		0.100	0.0130	mg/L			12/21/22 03:10	20
Chlorobenzene	<0.0120		0.100	0.0120	mg/L			12/21/22 03:10	20
Chloroform	<0.0360		0.100	0.0360	mg/L			12/21/22 03:10	20
1,2-Dichloroethane	<0.0100		0.100	0.0100	mg/L			12/21/22 03:10	20
1,1-Dichloroethene	<0.0110		0.100	0.0110	mg/L			12/21/22 03:10	20
Tetrachloroethene	<0.0870		0.200	0.0870	mg/L			12/21/22 03:10	20
Trichloroethene	<0.0820		0.200	0.0820	mg/L			12/21/22 03:10	20
Vinyl chloride	<0.0190		0.100	0.0190	mg/L			12/21/22 03:10	20

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 121		12/21/22 03:10	20
Dibromofluoromethane (Surr)	121		80 - 121		12/21/22 03:10	20
Toluene-d8 (Surr)	101		80 - 120		12/21/22 03:10	20

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-375288/2-A

Matrix: Water

Analysis Batch: 375349

Client Sample ID: Lab Control Sample

Prep Type: TCLP

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	2.00	1.876		mg/L		94	68 - 120
2-Butanone (MEK)	4.00	5.422		mg/L		136	47 - 150
Carbon tetrachloride	2.00	1.822		mg/L		91	65 - 120
Chlorobenzene	2.00	1.884		mg/L		94	66 - 120
Chloroform	2.00	1.963		mg/L		98	64 - 120
1,2-Dichloroethane	2.00	1.917		mg/L		96	61 - 120
1,1-Dichloroethene	2.00	1.457		mg/L		73	46 - 124
Tetrachloroethene	2.00	1.606		mg/L		80	60 - 120
Trichloroethene	2.00	1.916		mg/L		96	69 - 120
Vinyl chloride	2.00	0.9444		mg/L		47	41 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		80 - 121
Dibromofluoromethane (Surr)	89		80 - 121
Toluene-d8 (Surr)	104		80 - 120

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-374942/1-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 374942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzidine	<1.10		20.0	1.10	ug/L		12/15/22 12:28	12/16/22 19:17	1
Benzoic acid	<17.0		100	17.0	ug/L		12/15/22 12:28	12/16/22 19:17	1
Benzyl alcohol	<1.30		10.0	1.30	ug/L		12/15/22 12:28	12/16/22 19:17	1
Bis(2-chloroethoxy)methane	<0.760		10.0	0.760	ug/L		12/15/22 12:28	12/16/22 19:17	1
Bis(2-chloroethyl)ether	<0.820		10.0	0.820	ug/L		12/15/22 12:28	12/16/22 19:17	1
bis(2-chloroisopropyl) ether	<0.540		10.0	0.540	ug/L		12/15/22 12:28	12/16/22 19:17	1
Bis(2-ethylhexyl) phthalate	<5.50		10.0	5.50	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Bromophenyl phenyl ether	<0.700		10.0	0.700	ug/L		12/15/22 12:28	12/16/22 19:17	1
Butyl benzyl phthalate	<5.40		10.0	5.40	ug/L		12/15/22 12:28	12/16/22 19:17	1
Carbazole	<1.00		10.0	1.00	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Chloroaniline	<0.620		10.0	0.620	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Chloro-3-methylphenol	<0.840		10.0	0.840	ug/L		12/15/22 12:28	12/16/22 19:17	1
2-Chloronaphthalene	<0.640		10.0	0.640	ug/L		12/15/22 12:28	12/16/22 19:17	1
2-Chlorophenol	<0.540		10.0	0.540	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Chlorophenyl phenyl ether	<0.690		10.0	0.690	ug/L		12/15/22 12:28	12/16/22 19:17	1
Dibenz(a,h)anthracene	<3.90		10.0	3.90	ug/L		12/15/22 12:28	12/16/22 19:17	1
Dibenzofuran	<0.740		10.0	0.740	ug/L		12/15/22 12:28	12/16/22 19:17	1
1,2-Dichlorobenzene	<0.620		10.0	0.620	ug/L		12/15/22 12:28	12/16/22 19:17	1
1,3-Dichlorobenzene	<0.640		10.0	0.640	ug/L		12/15/22 12:28	12/16/22 19:17	1
1,4-Dichlorobenzene	<0.640		10.0	0.640	ug/L		12/15/22 12:28	12/16/22 19:17	1
3,3'-Dichlorobenzidine	<1.40		10.0	1.40	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,4-Dichlorophenol	<0.850		10.0	0.850	ug/L		12/15/22 12:28	12/16/22 19:17	1
Diethyl phthalate	<1.70		10.0	1.70	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,4-Dimethylphenol	<0.580		10.0	0.580	ug/L		12/15/22 12:28	12/16/22 19:17	1
Dimethyl phthalate	<1.00		10.0	1.00	ug/L		12/15/22 12:28	12/16/22 19:17	1

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-374942/1-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 374942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	<5.60		10.0	5.60	ug/L		12/15/22 12:28	12/16/22 19:17	1
4,6-Dinitro-2-methylphenol	<6.90		10.0	6.90	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,4-Dinitrophenol	<13.0		20.0	13.0	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,4-Dinitrotoluene	<6.40		10.0	6.40	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,6-Dinitrotoluene	<0.520		10.0	0.520	ug/L		12/15/22 12:28	12/16/22 19:17	1
Di-n-octyl phthalate	<7.00		20.0	7.00	ug/L		12/15/22 12:28	12/16/22 19:17	1
Hexachlorobenzene	<0.700		10.0	0.700	ug/L		12/15/22 12:28	12/16/22 19:17	1
Hexachlorobutadiene	<0.860		10.0	0.860	ug/L		12/15/22 12:28	12/16/22 19:17	1
Hexachlorocyclopentadiene	<5.10		10.0	5.10	ug/L		12/15/22 12:28	12/16/22 19:17	1
Hexachloroethane	<0.970		10.0	0.970	ug/L		12/15/22 12:28	12/16/22 19:17	1
Isophorone	<0.930		10.0	0.930	ug/L		12/15/22 12:28	12/16/22 19:17	1
2-Methylnaphthalene	<0.590		10.0	0.590	ug/L		12/15/22 12:28	12/16/22 19:17	1
2-Methylphenol	<0.650		10.0	0.650	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Methylphenol (and/or 3-Methylphenol)	<0.700		10.0	0.700	ug/L		12/15/22 12:28	12/16/22 19:17	1
2-Nitroaniline	<5.90		10.0	5.90	ug/L		12/15/22 12:28	12/16/22 19:17	1
3-Nitroaniline	<2.70		10.0	2.70	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Nitroaniline	<1.30		10.0	1.30	ug/L		12/15/22 12:28	12/16/22 19:17	1
Nitrobenzene	<0.800		10.0	0.800	ug/L		12/15/22 12:28	12/16/22 19:17	1
2-Nitrophenol	<6.80		10.0	6.80	ug/L		12/15/22 12:28	12/16/22 19:17	1
4-Nitrophenol	<7.60		10.0	7.60	ug/L		12/15/22 12:28	12/16/22 19:17	1
N-Nitrosodimethylamine	<0.720		10.0	0.720	ug/L		12/15/22 12:28	12/16/22 19:17	1
N-Nitrosodi-n-propylamine	<0.920		10.0	0.920	ug/L		12/15/22 12:28	12/16/22 19:17	1
N-Nitrosodiphenylamine	<0.750		10.0	0.750	ug/L		12/15/22 12:28	12/16/22 19:17	1
Pentachlorophenol	<9.60		10.0	9.60	ug/L		12/15/22 12:28	12/16/22 19:17	1
Phenol	<1.10		10.0	1.10	ug/L		12/15/22 12:28	12/16/22 19:17	1
Pyridine	<1.60		10.0	1.60	ug/L		12/15/22 12:28	12/16/22 19:17	1
Total Cresols	<0.700		10.0	0.700	ug/L		12/15/22 12:28	12/16/22 19:17	1
1,2,4-Trichlorobenzene	<0.560		10.0	0.560	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,4,5-Trichlorophenol	<5.30		10.0	5.30	ug/L		12/15/22 12:28	12/16/22 19:17	1
2,4,6-Trichlorophenol	<5.00		10.0	5.00	ug/L		12/15/22 12:28	12/16/22 19:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	92		28 - 110	12/15/22 12:28	12/16/22 19:17	1
2-Fluorophenol (Surr)	75		13 - 110	12/15/22 12:28	12/16/22 19:17	1
Nitrobenzene-d5 (Surr)	91		27 - 115	12/15/22 12:28	12/16/22 19:17	1
Phenol-d5 (Surr)	60		12 - 110	12/15/22 12:28	12/16/22 19:17	1
Terphenyl-d14 (Surr)	106		10 - 125	12/15/22 12:28	12/16/22 19:17	1
2,4,6-Tribromophenol (Surr)	89		15 - 121	12/15/22 12:28	12/16/22 19:17	1

Lab Sample ID: LCS 310-374942/2-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzyl alcohol	100	61.96		ug/L		62	28 - 110
Bis(2-chloroethoxy)methane	100	89.59		ug/L		90	31 - 110
Bis(2-chloroethyl)ether	100	88.12		ug/L		88	30 - 110
bis(2-chloroisopropyl) ether	100	83.91		ug/L		84	27 - 110

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-374942/2-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bis(2-ethylhexyl) phthalate	100	96.12		ug/L		96	29 - 126
4-Bromophenyl phenyl ether	100	96.89		ug/L		97	33 - 110
Butyl benzyl phthalate	100	101.4		ug/L		101	31 - 121
Carbazole	100	102.9		ug/L		103	26 - 119
4-Chloroaniline	100	95.92		ug/L		96	10 - 121
4-Chloro-3-methylphenol	100	92.53		ug/L		93	34 - 115
2-Chloronaphthalene	100	87.41		ug/L		87	24 - 110
2-Chlorophenol	100	89.85		ug/L		90	32 - 110
4-Chlorophenyl phenyl ether	100	93.20		ug/L		93	31 - 110
Dibenz(a,h)anthracene	100	79.97		ug/L		80	31 - 122
Dibenzofuran	100	93.92		ug/L		94	31 - 110
1,2-Dichlorobenzene	100	67.58		ug/L		68	22 - 110
1,3-Dichlorobenzene	100	64.04		ug/L		64	20 - 110
1,4-Dichlorobenzene	100	65.49		ug/L		65	21 - 110
2,4-Dichlorophenol	100	92.16		ug/L		92	31 - 110
Diethyl phthalate	100	97.35		ug/L		97	36 - 113
2,4-Dimethylphenol	100	99.37		ug/L		99	22 - 110
Dimethyl phthalate	100	97.05		ug/L		97	23 - 117
Di-n-butyl phthalate	100	103.6		ug/L		104	39 - 119
4,6-Dinitro-2-methylphenol	200	178.8		ug/L		89	10 - 125
2,4-Dinitrophenol	200	147.7		ug/L		74	10 - 110
2,4-Dinitrotoluene	100	104.2		ug/L		104	36 - 115
2,6-Dinitrotoluene	100	99.40		ug/L		99	35 - 117
Di-n-octyl phthalate	100	103.9		ug/L		104	25 - 139
Hexachlorobenzene	100	95.39		ug/L		95	35 - 110
Hexachlorobutadiene	100	66.19		ug/L		66	21 - 110
Hexachlorocyclopentadiene	100	77.81		ug/L		78	10 - 110
Hexachloroethane	100	62.29		ug/L		62	17 - 110
Isophorone	100	95.67		ug/L		96	33 - 111
2-Methylnaphthalene	100	75.45		ug/L		75	26 - 110
2-Methylphenol	100	89.12		ug/L		89	29 - 110
4-Methylphenol (and/or 3-Methylphenol)	100	86.80		ug/L		87	24 - 110
2-Nitroaniline	100	100.6		ug/L		101	33 - 115
3-Nitroaniline	100	99.18		ug/L		99	20 - 119
4-Nitroaniline	100	99.49		ug/L		99	18 - 118
Nitrobenzene	100	91.60		ug/L		92	31 - 110
2-Nitrophenol	100	93.93		ug/L		94	28 - 112
4-Nitrophenol	200	102.5		ug/L		51	10 - 110
N-Nitrosodimethylamine	100	76.10		ug/L		76	24 - 110
N-Nitrosodi-n-propylamine	100	92.53		ug/L		93	32 - 114
N-Nitrosodiphenylamine	100	99.76		ug/L		100	22 - 119
Pentachlorophenol	200	177.8		ug/L		89	10 - 116
Phenol	100	57.12		ug/L		57	20 - 110
Pyridine	200	39.64		ug/L		20	10 - 110
1,2,4-Trichlorobenzene	100	73.10		ug/L		73	23 - 110
2,4,5-Trichlorophenol	100	98.69		ug/L		99	25 - 113
2,4,6-Trichlorophenol	100	98.47		ug/L		98	21 - 117

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-374942/2-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374942

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	92		28 - 110
2-Fluorophenol (Surr)	75		13 - 110
Nitrobenzene-d5 (Surr)	93		27 - 115
Phenol-d5 (Surr)	60		12 - 110
Terphenyl-d14 (Surr)	108		10 - 125
2,4,6-Tribromophenol (Surr)	94		15 - 121

Lab Sample ID: LCSD 310-374942/3-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 374942

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzyl alcohol	100	51.63		ug/L		52	28 - 110	18	35
Bis(2-chloroethoxy)methane	100	74.26		ug/L		74	31 - 110	19	35
Bis(2-chloroethyl)ether	100	75.20		ug/L		75	30 - 110	16	35
bis(2-chloroisopropyl) ether	100	70.97		ug/L		71	27 - 110	17	35
Bis(2-ethylhexyl) phthalate	100	81.09		ug/L		81	29 - 126	17	35
4-Bromophenyl phenyl ether	100	80.69		ug/L		81	33 - 110	18	35
Butyl benzyl phthalate	100	82.72		ug/L		83	31 - 121	20	35
Carbazole	100	85.05		ug/L		85	26 - 119	19	35
4-Chloroaniline	100	81.34		ug/L		81	10 - 121	16	35
4-Chloro-3-methylphenol	100	76.61		ug/L		77	34 - 115	19	35
2-Chloronaphthalene	100	71.81		ug/L		72	24 - 110	20	35
2-Chlorophenol	100	73.04		ug/L		73	32 - 110	21	35
4-Chlorophenyl phenyl ether	100	77.76		ug/L		78	31 - 110	18	35
Dibenz(a,h)anthracene	100	66.87		ug/L		67	31 - 122	18	35
Dibenzofuran	100	77.18		ug/L		77	31 - 110	20	35
1,2-Dichlorobenzene	100	57.25		ug/L		57	22 - 110	17	35
1,3-Dichlorobenzene	100	53.39		ug/L		53	20 - 110	18	35
1,4-Dichlorobenzene	100	52.90		ug/L		53	21 - 110	21	35
2,4-Dichlorophenol	100	73.72		ug/L		74	31 - 110	22	35
Diethyl phthalate	100	82.71		ug/L		83	36 - 113	16	35
2,4-Dimethylphenol	100	80.64		ug/L		81	22 - 110	21	35
Dimethyl phthalate	100	81.56		ug/L		82	23 - 117	17	35
Di-n-butyl phthalate	100	86.03		ug/L		86	39 - 119	19	35
4,6-Dinitro-2-methylphenol	200	145.6		ug/L		73	10 - 125	20	35
2,4-Dinitrophenol	200	128.1		ug/L		64	10 - 110	14	35
2,4-Dinitrotoluene	100	83.20		ug/L		83	36 - 115	22	35
2,6-Dinitrotoluene	100	82.93		ug/L		83	35 - 117	18	35
Di-n-octyl phthalate	100	89.28		ug/L		89	25 - 139	15	35
Hexachlorobenzene	100	77.72		ug/L		78	35 - 110	20	35
Hexachlorobutadiene	100	57.90		ug/L		58	21 - 110	13	35
Hexachlorocyclopentadiene	100	68.61		ug/L		69	10 - 110	13	35
Hexachloroethane	100	53.71		ug/L		54	17 - 110	15	35
Isophorone	100	79.47		ug/L		79	33 - 111	19	35
2-Methylnaphthalene	100	63.17		ug/L		63	26 - 110	18	35
2-Methylphenol	100	74.51		ug/L		75	29 - 110	18	35
4-Methylphenol (and/or 3-Methylphenol)	100	72.79		ug/L		73	24 - 110	18	35

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-374942/3-A

Matrix: Water

Analysis Batch: 375018

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 374942

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Nitroaniline	100	81.10		ug/L		81	33 - 115	21	35
3-Nitroaniline	100	83.95		ug/L		84	20 - 119	17	35
4-Nitroaniline	100	84.98		ug/L		85	18 - 118	16	35
Nitrobenzene	100	72.86		ug/L		73	31 - 110	23	35
2-Nitrophenol	100	74.57		ug/L		75	28 - 112	23	35
4-Nitrophenol	200	104.8		ug/L		52	10 - 110	2	35
N-Nitrosodimethylamine	100	61.82		ug/L		62	24 - 110	21	35
N-Nitrosodi-n-propylamine	100	78.75		ug/L		79	32 - 114	16	35
N-Nitrosodiphenylamine	100	80.31		ug/L		80	22 - 119	22	35
Pentachlorophenol	200	149.5		ug/L		75	10 - 116	17	35
Phenol	100	49.07		ug/L		49	20 - 110	15	35
Pyridine	200	37.67		ug/L		19	10 - 110	5	35
1,2,4-Trichlorobenzene	100	60.25		ug/L		60	23 - 110	19	35
2,4,5-Trichlorophenol	100	81.03		ug/L		81	25 - 113	20	35
2,4,6-Trichlorophenol	100	79.75		ug/L		80	21 - 117	21	35

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Fluorobiphenyl (Surr)	79		28 - 110
2-Fluorophenol (Surr)	64		13 - 110
Nitrobenzene-d5 (Surr)	77		27 - 115
Phenol-d5 (Surr)	53		12 - 110
Terphenyl-d14 (Surr)	88		10 - 125
2,4,6-Tribromophenol (Surr)	80		15 - 121

Lab Sample ID: LCS 310-375147/2-A

Matrix: Water

Analysis Batch: 375184

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 375147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	0.125	0.07154		mg/L		57	28 - 110
2,4-Dinitrotoluene	0.125	0.1110		mg/L		89	44 - 118
Hexachlorobenzene	0.125	0.09330		mg/L		75	47 - 117
Hexachlorobutadiene	0.125	0.07039		mg/L		56	24 - 110
Hexachloroethane	0.125	0.06608		mg/L		53	19 - 110
2-Methylphenol	0.125	0.09818		mg/L		79	40 - 117
4-Methylphenol (and/or 3-Methylphenol)	0.125	0.09218		mg/L		74	41 - 115
Nitrobenzene	0.125	0.09115		mg/L		73	42 - 113
Pentachlorophenol	0.250	0.1875		mg/L		75	11 - 148
Pyridine	0.250	0.1026		mg/L		41	10 - 110
2,4,5-Trichlorophenol	0.125	0.09695		mg/L		78	43 - 118
2,4,6-Trichlorophenol	0.125	0.09678		mg/L		77	41 - 120

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
2-Fluorobiphenyl (Surr)	74		30 - 110
2-Fluorophenol (Surr)	63		13 - 110
Nitrobenzene-d5 (Surr)	72		32 - 113
Phenol-d5 (Surr)	54		18 - 110

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-375147/2-A

Matrix: Water

Analysis Batch: 375184

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 375147

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14 (Surr)	65		33 - 120
2,4,6-Tribromophenol (Surr)	81		11 - 130

Lab Sample ID: LCSD 310-375147/3-A

Matrix: Water

Analysis Batch: 375184

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 375147

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.125	0.06117		mg/L		49	28 - 110	16	35
2,4-Dinitrotoluene	0.125	0.09847		mg/L		79	44 - 118	12	35
Hexachlorobenzene	0.125	0.08490		mg/L		68	47 - 117	9	35
Hexachlorobutadiene	0.125	0.06737		mg/L		54	24 - 110	4	35
Hexachloroethane	0.125	0.06216		mg/L		50	19 - 110	6	35
2-Methylphenol	0.125	0.08633		mg/L		69	40 - 117	13	35
4-Methylphenol (and/or 3-Methylphenol)	0.125	0.08483		mg/L		68	41 - 115	8	35
Nitrobenzene	0.125	0.07888		mg/L		63	42 - 113	14	35
Pentachlorophenol	0.250	0.1613		mg/L		65	11 - 148	15	35
Pyridine	0.250	0.06671	*1	mg/L		27	10 - 110	42	35
2,4,5-Trichlorophenol	0.125	0.08282		mg/L		66	43 - 118	16	35
2,4,6-Trichlorophenol	0.125	0.08672		mg/L		69	41 - 120	11	35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	66		30 - 110
2-Fluorophenol (Surr)	60		13 - 110
Nitrobenzene-d5 (Surr)	67		32 - 113
Phenol-d5 (Surr)	53		18 - 110
Terphenyl-d14 (Surr)	73		33 - 120
2,4,6-Tribromophenol (Surr)	76		11 - 130

Lab Sample ID: LB 310-374981/1-B

Matrix: Water

Analysis Batch: 375184

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 375147

Analyte	LB	LB							
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.00650		0.0500	0.00650	mg/L		12/19/22 08:12	12/19/22 13:16	1
2,4-Dinitrotoluene	<0.00540		0.0500	0.00540	mg/L		12/19/22 08:12	12/19/22 13:16	1
Hexachlorobenzene	<0.00690		0.0500	0.00690	mg/L		12/19/22 08:12	12/19/22 13:16	1
Hexachlorobutadiene	<0.00600		0.0500	0.00600	mg/L		12/19/22 08:12	12/19/22 13:16	1
Hexachloroethane	<0.00640		0.0500	0.00640	mg/L		12/19/22 08:12	12/19/22 13:16	1
2-Methylphenol	<0.00500		0.0500	0.00500	mg/L		12/19/22 08:12	12/19/22 13:16	1
4-Methylphenol (and/or 3-Methylphenol)	<0.00380		0.0500	0.00380	mg/L		12/19/22 08:12	12/19/22 13:16	1
Nitrobenzene	<0.00530		0.0500	0.00530	mg/L		12/19/22 08:12	12/19/22 13:16	1
Pentachlorophenol	<0.0150		0.0500	0.0150	mg/L		12/19/22 08:12	12/19/22 13:16	1
Pyridine	<0.00740		0.0500	0.00740	mg/L		12/19/22 08:12	12/19/22 13:16	1
Total Cresols	<0.00500		0.0500	0.00500	mg/L		12/19/22 08:12	12/19/22 13:16	1
2,4,5-Trichlorophenol	<0.00530		0.0500	0.00530	mg/L		12/19/22 08:12	12/19/22 13:16	1
2,4,6-Trichlorophenol	<0.00590		0.0500	0.00590	mg/L		12/19/22 08:12	12/19/22 13:16	1

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	63		30 - 110	12/19/22 08:12	12/19/22 13:16	1
2-Fluorophenol (Surr)	56		13 - 110	12/19/22 08:12	12/19/22 13:16	1
Nitrobenzene-d5 (Surr)	63		32 - 113	12/19/22 08:12	12/19/22 13:16	1
Phenol-d5 (Surr)	47		18 - 110	12/19/22 08:12	12/19/22 13:16	1
Terphenyl-d14 (Surr)	76		33 - 120	12/19/22 08:12	12/19/22 13:16	1
2,4,6-Tribromophenol (Surr)	66		11 - 130	12/19/22 08:12	12/19/22 13:16	1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 310-374881/1-A

Matrix: Water

Analysis Batch: 374866

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 374881

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.0490		0.200	0.0490	ug/L		12/15/22 08:33	12/15/22 13:04	1
Acenaphthylene	<0.0630		0.200	0.0630	ug/L		12/15/22 08:33	12/15/22 13:04	1
Anthracene	<0.0610		0.200	0.0610	ug/L		12/15/22 08:33	12/15/22 13:04	1
Benzo(a)anthracene	<0.0860		0.200	0.0860	ug/L		12/15/22 08:33	12/15/22 13:04	1
Benzo(a)pyrene	<0.120		0.200	0.120	ug/L		12/15/22 08:33	12/15/22 13:04	1
Benzo(b)fluoranthene	<0.100		0.200	0.100	ug/L		12/15/22 08:33	12/15/22 13:04	1
Benzo(g,h,i)perylene	<0.120		0.200	0.120	ug/L		12/15/22 08:33	12/15/22 13:04	1
Benzo(k)fluoranthene	<0.110		0.200	0.110	ug/L		12/15/22 08:33	12/15/22 13:04	1
Chrysene	<0.0730		0.200	0.0730	ug/L		12/15/22 08:33	12/15/22 13:04	1
Dibenz(a,h)anthracene	<0.130		0.200	0.130	ug/L		12/15/22 08:33	12/15/22 13:04	1
Fluoranthene	<0.130		0.200	0.130	ug/L		12/15/22 08:33	12/15/22 13:04	1
Fluorene	<0.0390		0.200	0.0390	ug/L		12/15/22 08:33	12/15/22 13:04	1
Indeno(1,2,3-cd)pyrene	<0.110		0.200	0.110	ug/L		12/15/22 08:33	12/15/22 13:04	1
2-Methylnaphthalene	0.1440	J	0.200	0.0800	ug/L		12/15/22 08:33	12/15/22 13:04	1
Naphthalene	<0.200		0.500	0.200	ug/L		12/15/22 08:33	12/15/22 13:04	1
Phenanthrene	<0.0870		0.200	0.0870	ug/L		12/15/22 08:33	12/15/22 13:04	1
Pyrene	<0.110		0.200	0.110	ug/L		12/15/22 08:33	12/15/22 13:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	75		21 - 110	12/15/22 08:33	12/15/22 13:04	1
Nitrobenzene-d5 (Surr)	78		19 - 110	12/15/22 08:33	12/15/22 13:04	1
Terphenyl-d14 (Surr)	99		16 - 110	12/15/22 08:33	12/15/22 13:04	1

Lab Sample ID: LCS 310-374881/2-A

Matrix: Water

Analysis Batch: 374866

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374881

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	4.00	3.203		ug/L		80	20 - 110
Acenaphthylene	4.00	3.370		ug/L		84	23 - 110
Anthracene	4.00	3.545		ug/L		89	23 - 110
Benzo(a)anthracene	4.00	3.928		ug/L		98	27 - 110
Benzo(a)pyrene	4.00	3.751		ug/L		94	23 - 110
Benzo(b)fluoranthene	4.00	3.937		ug/L		98	27 - 112
Benzo(g,h,i)perylene	4.00	3.263		ug/L		82	10 - 126
Benzo(k)fluoranthene	4.00	3.797		ug/L		95	27 - 111
Chrysene	4.00	3.902		ug/L		98	27 - 110

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 310-374881/2-A

Matrix: Water

Analysis Batch: 374866

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374881

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dibenz(a,h)anthracene	4.00	3.037		ug/L		76	11 - 123
Fluoranthene	4.00	3.887		ug/L		97	26 - 110
Fluorene	4.00	3.453		ug/L		86	24 - 110
Indeno(1,2,3-cd)pyrene	4.00	3.523		ug/L		88	12 - 127
2-Methylnaphthalene	4.00	3.184		ug/L		80	19 - 110
Naphthalene	4.00	3.074		ug/L		77	16 - 110
Phenanthrene	4.00	3.729		ug/L		93	25 - 110
Pyrene	4.00	3.871		ug/L		97	25 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	80		21 - 110
Nitrobenzene-d5 (Surr)	78		19 - 110
Terphenyl-d14 (Surr)	98		16 - 110

Lab Sample ID: LCSD 310-374881/3-A

Matrix: Water

Analysis Batch: 374866

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 374881

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene	4.00	2.961		ug/L		74	20 - 110	8	35
Acenaphthylene	4.00	3.113		ug/L		78	23 - 110	8	35
Anthracene	4.00	3.309		ug/L		83	23 - 110	7	35
Benzo(a)anthracene	4.00	3.693		ug/L		92	27 - 110	6	35
Benzo(a)pyrene	4.00	3.500		ug/L		88	23 - 110	7	35
Benzo(b)fluoranthene	4.00	3.542		ug/L		89	27 - 112	11	35
Benzo(g,h,i)perylene	4.00	3.051		ug/L		76	10 - 126	7	35
Benzo(k)fluoranthene	4.00	3.560		ug/L		89	27 - 111	6	35
Chrysene	4.00	3.692		ug/L		92	27 - 110	6	35
Dibenz(a,h)anthracene	4.00	2.782		ug/L		70	11 - 123	9	35
Fluoranthene	4.00	3.570		ug/L		89	26 - 110	8	35
Fluorene	4.00	3.203		ug/L		80	24 - 110	8	35
Indeno(1,2,3-cd)pyrene	4.00	3.207		ug/L		80	12 - 127	9	35
2-Methylnaphthalene	4.00	2.858		ug/L		71	19 - 110	11	35
Naphthalene	4.00	2.786		ug/L		70	16 - 110	10	35
Phenanthrene	4.00	3.372		ug/L		84	25 - 110	10	35
Pyrene	4.00	3.556		ug/L		89	25 - 110	8	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	77		21 - 110
Nitrobenzene-d5 (Surr)	76		19 - 110
Terphenyl-d14 (Surr)	100		16 - 110

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-374982/1-A

Matrix: Water

Analysis Batch: 375396

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 374982

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.170		0.800	0.170	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1221	<0.170		0.800	0.170	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1232	<0.170		0.800	0.170	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1242	<0.170		0.800	0.170	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1248	<0.110		0.800	0.110	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1254	<0.110		0.800	0.110	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1260	<0.110		0.800	0.110	ug/L		12/16/22 07:05	12/21/22 07:43	1
PCB-1268	<0.110		0.800	0.110	ug/L		12/16/22 07:05	12/21/22 07:43	1
Polychlorinated biphenyls, Total	<0.170		0.800	0.170	ug/L		12/16/22 07:05	12/21/22 07:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	38		10 - 110	12/16/22 07:05	12/21/22 07:43	1
Tetrachloro-m-xylene (Surr)	50		13 - 110	12/16/22 07:05	12/21/22 07:43	1

Lab Sample ID: LCS 310-374982/2-A

Matrix: Water

Analysis Batch: 375396

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374982

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	10.0	8.770		ug/L		88	24 - 110
PCB-1260	10.0	7.375		ug/L		74	20 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	40		10 - 110
Tetrachloro-m-xylene (Surr)	50		13 - 110

Lab Sample ID: LCSD 310-374982/3-A

Matrix: Water

Analysis Batch: 375396

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 374982

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	10.0	8.776		ug/L		88	24 - 110	0	35
PCB-1260	10.0	7.071		ug/L		71	20 - 110	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	42		10 - 110
Tetrachloro-m-xylene (Surr)	58		13 - 110

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 310-374857/1-A

Matrix: Water

Analysis Batch: 375148

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 374857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<300		300		ug/L		12/15/22 07:10	12/19/22 12:24	1
Diesel	<300		300		ug/L		12/15/22 07:10	12/19/22 12:24	1
Waste Oil	<300		300		ug/L		12/15/22 07:10	12/19/22 12:24	1

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 310-374857/1-A
Matrix: Water
Analysis Batch: 375148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374857

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Extractable Hydrocarbons	<500		500		ug/L		12/15/22 07:10	12/19/22 12:24	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	98		17 - 120				12/15/22 07:10	12/19/22 12:24	1

Lab Sample ID: LCS 310-374857/2-A
Matrix: Water
Analysis Batch: 375148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel	4000	3624		ug/L		91	22 - 120		
Surrogate	%Recovery	LCS Qualifier	Limits						
n-Octacosane	102		17 - 120						

Lab Sample ID: LCSD 310-374857/3-A
Matrix: Water
Analysis Batch: 375148

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374857

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Diesel	4000	3229		ug/L		81	22 - 120	12	35
Surrogate	%Recovery	LCSD Qualifier	Limits						
n-Octacosane	91		17 - 120						

Method: 6010D - Metals (ICP)

Lab Sample ID: LB 310-374980/1-B
Matrix: Water
Analysis Batch: 375159

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 375009

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.100		0.200	0.100	mg/L		12/16/22 09:00	12/16/22 18:15	1
Barium	<0.110		0.500	0.110	mg/L		12/16/22 09:00	12/16/22 18:15	1
Cadmium	<0.00780		0.0200	0.00780	mg/L		12/16/22 09:00	12/16/22 18:15	1
Chromium	<0.00870		0.0200	0.00870	mg/L		12/16/22 09:00	12/16/22 18:15	1
Lead	<0.0500		0.100	0.0500	mg/L		12/16/22 09:00	12/16/22 18:15	1
Selenium	<0.0670		0.100	0.0670	mg/L		12/16/22 09:00	12/16/22 18:15	1
Silver	<0.00940		0.0200	0.00940	mg/L		12/16/22 09:00	12/16/22 18:15	1

Lab Sample ID: LCS 310-374980/2-B
Matrix: Water
Analysis Batch: 375159

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 375009

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	4.00	4.227		mg/L		106	80 - 120		
Barium	2.00	2.017		mg/L		101	80 - 120		
Cadmium	2.00	2.004		mg/L		100	80 - 120		

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 310-374980/2-B
Matrix: Water
Analysis Batch: 375159

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 375009

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	2.00	2.025		mg/L		101	80 - 120
Lead	4.00	3.910		mg/L		98	80 - 120
Selenium	8.00	8.349		mg/L		104	80 - 120
Silver	2.00	2.202		mg/L		110	80 - 120

Lab Sample ID: 310-246520-1 MS
Matrix: Stormwater
Analysis Batch: 375159

Client Sample ID: Frac tank
Prep Type: TCLP
Prep Batch: 375009

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.500		20.0	21.41		mg/L		107	75 - 125
Barium	<0.550		10.0	10.24		mg/L		102	75 - 125
Cadmium	<0.0390		10.0	10.13		mg/L		101	75 - 125
Chromium	<0.0435		10.0	10.32		mg/L		103	75 - 125
Lead	<0.250		20.0	19.68		mg/L		98	75 - 125
Selenium	<0.335		40.0	42.25		mg/L		106	75 - 125
Silver	<0.0470		10.0	11.07		mg/L		111	75 - 125

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-375154/1-A
Matrix: Water
Analysis Batch: 375256

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 375154

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000750		0.00200	0.000750	mg/L		12/19/22 08:45	12/19/22 15:26	1
Barium	<0.000880		0.00200	0.000880	mg/L		12/19/22 08:45	12/19/22 15:26	1
Cadmium	<0.0000550		0.000100	0.0000550	mg/L		12/19/22 08:45	12/19/22 15:26	1
Chromium	<0.00110		0.00500	0.00110	mg/L		12/19/22 08:45	12/19/22 15:26	1
Lead	<0.000240		0.000500	0.000240	mg/L		12/19/22 08:45	12/19/22 15:26	1
Selenium	<0.000960		0.00500	0.000960	mg/L		12/19/22 08:45	12/19/22 15:26	1
Silver	<0.000490		0.00100	0.000490	mg/L		12/19/22 08:45	12/19/22 15:26	1

Lab Sample ID: LCS 310-375154/2-A
Matrix: Water
Analysis Batch: 375256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1900		mg/L		95	80 - 120
Barium	0.100	0.09428		mg/L		94	80 - 120
Cadmium	0.100	0.09384		mg/L		94	80 - 120
Chromium	0.100	0.09597		mg/L		96	80 - 120
Lead	0.200	0.1942		mg/L		97	80 - 120
Selenium	0.400	0.3642		mg/L		91	80 - 120
Silver	0.100	0.09766		mg/L		98	80 - 120

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-375359/1-A
Matrix: Water
Analysis Batch: 375469

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 375359

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000110		0.000200	0.000110	mg/L		12/20/22 14:01	12/21/22 11:08	1

Lab Sample ID: LCS 310-375359/2-A
Matrix: Water
Analysis Batch: 375469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375359

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001648		mg/L		99	80 - 120

Lab Sample ID: LB 310-374980/1-C
Matrix: Water
Analysis Batch: 375087

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 375023

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00120		0.00200	0.00120	mg/L		12/16/22 11:34	12/16/22 16:18	1

Lab Sample ID: LCS 310-374980/2-C
Matrix: Water
Analysis Batch: 375087

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 375023

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.0167	0.01749		mg/L		105	80 - 120

Lab Sample ID: 310-246520-1 MS
Matrix: Stormwater
Analysis Batch: 375087

Client Sample ID: Frac tank
Prep Type: TCLP
Prep Batch: 375023

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.00120		0.0167	0.01761		mg/L		106	80 - 120

Method: D93_85 - Ignitability, Pensky-Martens Closed Cup Method

Lab Sample ID: LCS 310-375117/1
Matrix: Water
Analysis Batch: 375117

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Flashpoint	81.0	81.80		Degrees F		101	94 - 109

Lab Sample ID: 310-246520-1 DU
Matrix: Stormwater
Analysis Batch: 375117

Client Sample ID: Frac tank
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Flashpoint	152		148.8		Degrees F		2	16

Eurofins Cedar Falls

QC Association Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

GC/MS VOA

Leach Batch: 375288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	1311	
LB 310-375288/1-A	Method Blank	TCLP	Water	1311	
LCS 310-375288/2-A	Lab Control Sample	TCLP	Water	1311	

Analysis Batch: 375342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	8260D	
MB 310-375342/5	Method Blank	Total/NA	Water	8260D	
LCS 310-375342/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-375342/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 375344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	8260D	
MB 310-375344/5	Method Blank	Total/NA	Water	8260D	
LCS 310-375344/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-375344/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 375349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	8260D	375288
LB 310-375288/1-A	Method Blank	TCLP	Water	8260D	375288
LCS 310-375288/2-A	Lab Control Sample	TCLP	Water	8260D	375288

GC/MS Semi VOA

Analysis Batch: 374866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	8270E SIM	374881
MB 310-374881/1-A	Method Blank	Total/NA	Water	8270E SIM	374881
LCS 310-374881/2-A	Lab Control Sample	Total/NA	Water	8270E SIM	374881
LCSD 310-374881/3-A	Lab Control Sample Dup	Total/NA	Water	8270E SIM	374881

Prep Batch: 374881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	3510C	
MB 310-374881/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-374881/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-374881/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 374942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	3510C	
MB 310-374942/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-374942/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-374942/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Leach Batch: 374981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	1311	
LB 310-374981/1-B	Method Blank	TCLP	Water	1311	

Eurofins Cedar Falls

QC Association Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

GC/MS Semi VOA

Analysis Batch: 375018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	8270E	374942
MB 310-374942/1-A	Method Blank	Total/NA	Water	8270E	374942
LCS 310-374942/2-A	Lab Control Sample	Total/NA	Water	8270E	374942
LCSD 310-374942/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	374942

Prep Batch: 375147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	3510C	374981
LB 310-374981/1-B	Method Blank	TCLP	Water	3510C	374981
LCS 310-375147/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-375147/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 375184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	8270E	375147
LB 310-374981/1-B	Method Blank	TCLP	Water	8270E	375147
LCS 310-375147/2-A	Lab Control Sample	Total/NA	Water	8270E	375147
LCSD 310-375147/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	375147

GC Semi VOA

Prep Batch: 374857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	3510C	
MB 310-374857/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-374857/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-374857/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 374982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	3510C	
MB 310-374982/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-374982/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-374982/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 375148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	OA-2	374857
MB 310-374857/1-A	Method Blank	Total/NA	Water	OA-2	374857
LCS 310-374857/2-A	Lab Control Sample	Total/NA	Water	OA-2	374857
LCSD 310-374857/3-A	Lab Control Sample Dup	Total/NA	Water	OA-2	374857

Analysis Batch: 375291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	OA-2	374857
310-246520-1	Frac tank	Total/NA	Stormwater	OA-2	374857

Analysis Batch: 375396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	8082A	374982
MB 310-374982/1-A	Method Blank	Total/NA	Water	8082A	374982

Eurofins Cedar Falls

QC Association Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

GC Semi VOA (Continued)

Analysis Batch: 375396 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-374982/2-A	Lab Control Sample	Total/NA	Water	8082A	374982
LCSD 310-374982/3-A	Lab Control Sample Dup	Total/NA	Water	8082A	374982

Metals

Leach Batch: 374980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	1311	
LB 310-374980/1-B	Method Blank	TCLP	Water	1311	
LB 310-374980/1-C	Method Blank	TCLP	Water	1311	
LCS 310-374980/2-B	Lab Control Sample	TCLP	Water	1311	
LCS 310-374980/2-C	Lab Control Sample	TCLP	Water	1311	
310-246520-1 MS	Frac tank	TCLP	Stormwater	1311	

Prep Batch: 375009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	3010A	374980
LB 310-374980/1-B	Method Blank	TCLP	Water	3010A	374980
LCS 310-374980/2-B	Lab Control Sample	TCLP	Water	3010A	374980
310-246520-1 MS	Frac tank	TCLP	Stormwater	3010A	374980

Prep Batch: 375023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	7470A	374980
LB 310-374980/1-C	Method Blank	TCLP	Water	7470A	374980
LCS 310-374980/2-C	Lab Control Sample	TCLP	Water	7470A	374980
310-246520-1 MS	Frac tank	TCLP	Stormwater	7470A	374980

Analysis Batch: 375087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	7470A	375023
LB 310-374980/1-C	Method Blank	TCLP	Water	7470A	375023
LCS 310-374980/2-C	Lab Control Sample	TCLP	Water	7470A	375023
310-246520-1 MS	Frac tank	TCLP	Stormwater	7470A	375023

Prep Batch: 375154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	3005A	
MB 310-375154/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-375154/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 375159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	TCLP	Stormwater	6010D	375009
LB 310-374980/1-B	Method Blank	TCLP	Water	6010D	375009
LCS 310-374980/2-B	Lab Control Sample	TCLP	Water	6010D	375009
310-246520-1 MS	Frac tank	TCLP	Stormwater	6010D	375009

Analysis Batch: 375256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	6020B	375154

Eurofins Cedar Falls

QC Association Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Metals (Continued)

Analysis Batch: 375256 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-375154/1-A	Method Blank	Total/NA	Water	6020B	375154
LCS 310-375154/2-A	Lab Control Sample	Total/NA	Water	6020B	375154

Prep Batch: 375359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	7470A	
MB 310-375359/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-375359/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 375469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	7470A	375359
MB 310-375359/1-A	Method Blank	Total/NA	Water	7470A	375359
LCS 310-375359/2-A	Lab Control Sample	Total/NA	Water	7470A	375359

General Chemistry

Analysis Batch: 375117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-246520-1	Frac tank	Total/NA	Stormwater	D93_85	
LCS 310-375117/1	Lab Control Sample	Total/NA	Water	D93_85	
310-246520-1 DU	Frac tank	Total/NA	Stormwater	D93_85	

Lab Chronicle

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Client Sample ID: Frac tank

Lab Sample ID: 310-246520-1

Date Collected: 12/13/22 15:00

Matrix: Stormwater

Date Received: 12/14/22 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			375288	FK4Z	EET CF	12/20/22 08:00 - 12/20/22 08:30 ¹
TCLP	Analysis	8260D		400	375349	WSE8	EET CF	12/21/22 03:52
Total/NA	Analysis	8260D		100	375342	FE5V	EET CF	12/21/22 09:46
Total/NA	Analysis	8260D		1000	375344	FE5V	EET CF	12/21/22 13:56
TCLP	Leach	1311			374981	FK4Z	EET CF	12/16/22 06:00 - 12/16/22 07:30 ¹
TCLP	Prep	3510C			375147	Y6AF	EET CF	12/19/22 08:12
TCLP	Analysis	8270E		10	375184	L0FS	EET CF	12/19/22 14:34
Total/NA	Prep	3510C			374942	Y6AF	EET CF	12/15/22 12:28
Total/NA	Analysis	8270E		100	375018	L0FS	EET CF	12/16/22 21:01
Total/NA	Prep	3510C			374881	Y6AF	EET CF	12/15/22 08:33
Total/NA	Analysis	8270E SIM		1000	374866	L0FS	EET CF	12/15/22 23:23
Total/NA	Prep	3510C			374982	Y6AF	EET CF	12/16/22 07:05
Total/NA	Analysis	8082A		20	375396	BW2O	EET CF	12/21/22 09:24
Total/NA	Prep	3510C			374857	Y6AF	EET CF	12/15/22 07:10
Total/NA	Analysis	OA-2		1	375148	C3AA	EET CF	12/19/22 16:38
Total/NA	Prep	3510C			374857	Y6AF	EET CF	12/15/22 07:10
Total/NA	Analysis	OA-2		50	375291	C3AA	EET CF	12/20/22 12:10
Total/NA	Prep	3510C			374857	Y6AF	EET CF	12/15/22 07:10
Total/NA	Analysis	OA-2		10	375291	C3AA	EET CF	12/20/22 12:39
TCLP	Leach	1311			374980	FK4Z	EET CF	12/16/22 06:00 - 12/16/22 07:30 ¹
TCLP	Prep	3010A			375009	QTZ5	EET CF	12/16/22 09:00
TCLP	Analysis	6010D		1	375159	ZRI4	EET CF	12/16/22 18:19
Total/NA	Prep	3005A			375154	QTZ5	EET CF	12/19/22 08:45
Total/NA	Analysis	6020B		1	375256	A6US	EET CF	12/19/22 15:52
TCLP	Leach	1311			374980	FK4Z	EET CF	12/16/22 06:00 - 12/16/22 07:30 ¹
TCLP	Prep	7470A			375023	XXW3	EET CF	12/16/22 11:34
TCLP	Analysis	7470A		1	375087	XXW3	EET CF	12/16/22 16:22
Total/NA	Prep	7470A			375359	XXW3	EET CF	12/20/22 14:01
Total/NA	Analysis	7470A		1	375469	XXW3	EET CF	12/21/22 11:12
Total/NA	Analysis	D93_85		1	375117	V7KD	EET CF	12/17/22 12:19

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins Cedar Falls

Accreditation/Certification Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8082A	3510C	Stormwater	PCB-1268
8082A	3510C	Stormwater	Polychlorinated biphenyls, Total
8260D		Stormwater	1,2,3-Trichlorobenzene
8260D		Stormwater	1,2,4-Trichlorobenzene
8260D		Stormwater	Bromobenzene
8260D		Stormwater	Hexane
8260D		Stormwater	p-Isopropyltoluene
8260D		Stormwater	sec-Butylbenzene
8260D		Stormwater	tert-Butylbenzene
8270E	3510C	Stormwater	Benzoic acid
8270E	3510C	Stormwater	Pyridine
8270E	3510C	Stormwater	Total Cresols
D93_85		Stormwater	Flashpoint

Method Summary

Client: EcoSource LLC
Project/Site: Marengo-water

Job ID: 310-246520-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8270E SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
OA-2	Iowa - Extractable Petroleum Hydrocarbons (GC)	Iowa DNR	EET CF
6010D	Metals (ICP)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
D93_85	Ignitability, Pensky-Martens Closed Cup Method	ASTM	EET CF
1311	TCLP Extraction	SW846	EET CF
1311	TCLP Zero Headspace Extraction	SW846	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3010A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

ASTM = ASTM International

Iowa DNR = Iowa Department of Natural Resources

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-246520 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Eco Source</u>			
City/State:	CITY <u>Windsor Heights</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>12-14-22</u>	TIME <u>1610</u>	Received By: <u>RL</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>R</u>		Correction Factor (°C): <u>0</u>	
Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>1.1</u>		Corrected Temp (°C): <u>1.1</u>	
Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Cedar Falls Division
33019 Venture Way
Cedar Falls IA 50613

DSMS.V.C.214

Phone 319-277-2401 or 1-800-750-2401
Fax 319-277-2425

Company Fire Source

Send Report To

Verbs in Dances

Address

6424 University Avenue

City/State/Z.p Code

Winder Heights, TN 38329

Telephone Number

641-666-1764

Samped by: (Print Name)

Cameron Lockin

(Signature)

88

Cecilia

#YourPO

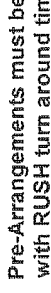
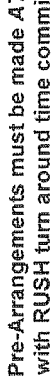
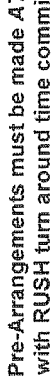
Invoice To

Project Name

Project Number

Email Address

[illegible]

NOTE: All turn around times are calculated from the time of receipt at TestAmerica				NOTES				Please fill in shaded areas			
NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.											
NOTE: There may be a charge assessed for TestAmerica disposing of sample remainders.											
Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Relinquished by	Date	Time
			6662-2	12/11/22	9:15						
Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Relinquished by	Date	Time
											
Shipped Via				Comments				Shipped Via			
Received for TestAmerica by 				12-14-22				16/0			
Temperature Upon Receipt:								Laboratory Comments			

Login Sample Receipt Checklist

Client: EcoSource LLC

Job Number: 310-246520-1

Login Number: 246520

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Tucker, Sarah L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Darren Fife
EcoSource LLC
6424 University Avenue
Windsor Heights, Iowa 50324

Generated 1/11/2023 12:02:00 PM

JOB DESCRIPTION

Marengo Stormwater Sample

JOB NUMBER

310-247563-1

Eurofins Cedar Falls

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Authorized for release by
Zach Bindert, Project Manager I
Zach.Bindert@et.eurofinsus.com
(319)277-2401

Generated
1/11/2023 12:02:00 PM

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	7
Definitions	9
Surrogate Summary	10
QC Sample Results	11
QC Association	13
Chronicle	14
Certification Summary	15
Method Summary	16
Chain of Custody	17
Receipt Checklists	19



Case Narrative

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Job ID: 310-247563-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-247563-1

Comments

No additional comments.

Receipt

The samples were received on 1/5/2023 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.7° C.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-376218. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-247563-1	Sample #1	Stormwater	01/05/23 10:00	01/05/23 17:00
310-247563-2	Sample #2	Stormwater	01/05/23 10:25	01/05/23 17:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Job ID: 310-247563-1

Lab Sample ID: 310-247563-1

Lab Sample ID: 310-247563-2

No Detections.

1/11/2023

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Client Sample ID: Sample #1

Lab Sample ID: 310-247563-1

Date Collected: 01/05/23 10:00

Matrix: Stormwater

Date Received: 01/05/23 17:00

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: Iowa DNR OA-1 (GC) - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L			01/07/23 23:01	1
Toluene	<2.00		2.00		ug/L			01/07/23 23:01	1
Ethylbenzene	<2.00		2.00		ug/L			01/07/23 23:01	1
Xylenes, Total	<6.00		6.00		ug/L			01/07/23 23:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		46 - 150		01/07/23 23:01	1

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<278		278		ug/L		01/06/23 07:39	01/09/23 13:23	1
Diesel	<278		278		ug/L		01/06/23 07:39	01/09/23 13:23	1
Waste Oil	<278		278		ug/L		01/06/23 07:39	01/09/23 13:23	1
Total Extractable Hydrocarbons	<463		463		ug/L		01/06/23 07:39	01/09/23 13:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	87		17 - 120	01/06/23 07:39	01/09/23 13:23	1

Client Sample Results

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Client Sample ID: Sample #2

Lab Sample ID: 310-247563-2

Date Collected: 01/05/23 10:25

Matrix: Stormwater

Date Received: 01/05/23 17:00

Sampler Name: Jordan Lowry

Sampler Phone Number: 641-660-1766

Method: Iowa DNR OA-1 (GC) - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L			01/07/23 23:32	1
Toluene	<2.00		2.00		ug/L			01/07/23 23:32	1
Ethylbenzene	<2.00		2.00		ug/L			01/07/23 23:32	1
Xylenes, Total	<6.00		6.00		ug/L			01/07/23 23:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		46 - 150		01/07/23 23:32	1

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<278		278		ug/L		01/06/23 07:39	01/09/23 13:37	1
Diesel	<278		278		ug/L		01/06/23 07:39	01/09/23 13:37	1
Waste Oil	<278		278		ug/L		01/06/23 07:39	01/09/23 13:37	1
Total Extractable Hydrocarbons	<463		463		ug/L		01/06/23 07:39	01/09/23 13:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	94		17 - 120	01/06/23 07:39	01/09/23 13:37	1

Definitions/Glossary

Client: EcoSource LLC

Job ID: 310-247563-1

Project/Site: Marengo Stormwater Sample

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Method: OA-1 (GC) - Volatile Petroleum Hydrocarbons (GC)

Matrix: Stormwater

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	BFB (46-150)						
310-247563-1	Sample #1	121						
310-247563-2	Sample #2	122						
Surrogate Legend								
BFB = 4-Bromofluorobenzene (Surr)								

Method: OA-1 (GC) - Volatile Petroleum Hydrocarbons (GC)

Matrix: Water

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	BFB (46-150)						
LCS 310-376208/6	Lab Control Sample	124						
MB 310-376208/7	Method Blank	121						
Surrogate Legend								
BFB = 4-Bromofluorobenzene (Surr)								

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Matrix: Stormwater

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	OTCN (17-120)						
310-247563-1	Sample #1	87						
310-247563-2	Sample #2	94						
Surrogate Legend								
OTCN = n-Octacosane								

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Matrix: Water

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	OTCN (17-120)						
LCS 310-376218/2-A	Lab Control Sample	100						
LCSD 310-376218/3-A	Lab Control Sample Dup	97						
MB 310-376218/1-A	Method Blank	87						
Surrogate Legend								
OTCN = n-Octacosane								

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Method: OA-1 (GC) - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 310-376208/7

Matrix: Water

Analysis Batch: 376208

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L			01/07/23 16:49	1
Toluene	<2.00		2.00		ug/L			01/07/23 16:49	1
Ethylbenzene	<2.00		2.00		ug/L			01/07/23 16:49	1
Xylenes, Total	<6.00		6.00		ug/L			01/07/23 16:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		46 - 150		01/07/23 16:49	1

Lab Sample ID: LCS 310-376208/6

Matrix: Water

Analysis Batch: 376208

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	40.0	44.81		ug/L		112	76 - 120
Toluene	40.0	45.76		ug/L		114	80 - 120
Ethylbenzene	40.0	46.56		ug/L		116	80 - 120
Xylenes, Total	120	140.3		ug/L		117	79 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	124		46 - 150

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 310-376218/1-A

Matrix: Water

Analysis Batch: 376317

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 376218

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<300		300		ug/L		01/06/23 07:19	01/09/23 10:48	1
Diesel	<300		300		ug/L		01/06/23 07:19	01/09/23 10:48	1
Waste Oil	<300		300		ug/L		01/06/23 07:19	01/09/23 10:48	1
Total Extractable Hydrocarbons	<500		500		ug/L		01/06/23 07:19	01/09/23 10:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	87		17 - 120	01/06/23 07:19	01/09/23 10:48	1

Lab Sample ID: LCS 310-376218/2-A

Matrix: Water

Analysis Batch: 376317

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 376218

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel	4000	3586		ug/L		90	22 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Octacosane	100		17 - 120

Eurofins Cedar Falls

QC Sample Results

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 310-376218/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 376317				Prep Batch: 376218							
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel			4000	3653		ug/L		91	22 - 120	2	35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
n-Octacosane	97		17 - 120								

QC Association Summary

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

GC VOA

Analysis Batch: 376208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-247563-1	Sample #1	Total/NA	Stormwater	OA-1 (GC)	
310-247563-2	Sample #2	Total/NA	Stormwater	OA-1 (GC)	
MB 310-376208/7	Method Blank	Total/NA	Water	OA-1 (GC)	
LCS 310-376208/6	Lab Control Sample	Total/NA	Water	OA-1 (GC)	

GC Semi VOA

Prep Batch: 376218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-247563-1	Sample #1	Total/NA	Stormwater	3510C	
310-247563-2	Sample #2	Total/NA	Stormwater	3510C	
MB 310-376218/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-376218/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-376218/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 376317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-247563-1	Sample #1	Total/NA	Stormwater	OA-2	376218
310-247563-2	Sample #2	Total/NA	Stormwater	OA-2	376218
MB 310-376218/1-A	Method Blank	Total/NA	Water	OA-2	376218
LCS 310-376218/2-A	Lab Control Sample	Total/NA	Water	OA-2	376218
LCSD 310-376218/3-A	Lab Control Sample Dup	Total/NA	Water	OA-2	376218

Lab Chronicle

Client: EcoSource LLC

Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Client Sample ID: Sample #1

Date Collected: 01/05/23 10:00

Date Received: 01/05/23 17:00

Lab Sample ID: 310-247563-1

Matrix: Stormwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OA-1 (GC)		1	376208	ZB9H	EET CF	01/07/23 23:01
Total/NA	Prep	3510C			376218	Y6AF	EET CF	01/06/23 07:39
Total/NA	Analysis	OA-2		1	376317	C3AA	EET CF	01/09/23 13:23

Client Sample ID: Sample #2

Date Collected: 01/05/23 10:25

Date Received: 01/05/23 17:00

Lab Sample ID: 310-247563-2

Matrix: Stormwater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OA-1 (GC)		1	376208	ZB9H	EET CF	01/07/23 23:32
Total/NA	Prep	3510C			376218	Y6AF	EET CF	01/06/23 07:39
Total/NA	Analysis	OA-2		1	376317	C3AA	EET CF	01/09/23 13:37

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: EcoSource LLC
Project/Site: Marengo Stormwater Sample

Job ID: 310-247563-1

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: EcoSource LLC

Job ID: 310-247563-1

Project/Site: Marengo Stormwater Sample

Method	Method Description	Protocol	Laboratory
OA-1 (GC)	Volatile Petroleum Hydrocarbons (GC)	Iowa DNR	EET CF
OA-2	Iowa - Extractable Petroleum Hydrocarbons (GC)	Iowa DNR	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

Iowa DNR = Iowa Department of Natural Resources

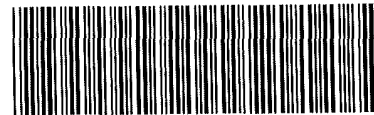
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-247563 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>EcoSource</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>1-5-23</u>	TIME <u>1700</u>	Received By: <u>AM</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler ID: _____			
Multiple Coolers? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler # _____ of _____			
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>+0.1</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.6</u>		Corrected Temp (°C): <u>0.7</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Login Sample Receipt Checklist

Client: EcoSource LLC

Job Number: 310-247563-1

Login Number: 247563

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Tucker, Sarah L

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Report To	Collection Location marengo lagoon storm water	Collector and Phone graesch matt 319/653-2135	Client Reference	Accession # 2226407
		Collected 2023-01-06 10:41	Received 2023-01-06 14:50	Project 07wqer
	BRIAN JERGENSEN IDNR-FO 6 1023 W MADISON ST WASHINGTON, IA 52353-1623			Sample Description surface water
				Sample Type Non-Drinking Water
				Sample Source
				Sample Note(s) 1

RESULTS OF ANALYSIS - FINAL REPORT

<u>TEST</u>	<u>RESULT (mg/L)</u>	<u>QUANT LIMIT</u>	<u>ANALYSIS NOTE(S)</u>
<i>Mercury, EPA 7470A</i>			
Mercury	<0.02	0.02	
<i>Metals, EPA 6020</i>			
Arsenic	<0.01	0.01	
Barium	0.17	0.05	
Cadmium	<0.02	0.02	
Chromium	<0.02	0.02	
Lead	<0.01	0.01	
Selenium	<0.01	0.01	
Silver	<0.01	0.01	

<u>TEST</u>	<u>RESULT (ug/L)</u>	<u>QUANT LIMIT</u>	<u>ANALYSIS NOTE(S)</u>
<i>GCMS Volatiles, EPA 8260</i>			
Chloromethane	<5	5	
Bromomethane	<5	5	
Vinyl chloride	<5	5	
Chloroethane	<5	5	
Methylene chloride	<5	5	
Methyl-t-butyl ether (MtBE)	<5	5	
Acetone	<5	5	
Carbon disulfide	<5	5	
1,1-Dichloroethene	<5	5	
1,1-Dichloroethane	<5	5	
Total 1,2-Dichloroethenes	<5	5	
Chloroform	<5	5	
1,2-Dichloroethane	<5	5	
2-Butanone	<5	5	
1,1,1-Trichloroethane	<5	5	
Carbon tetrachloride	<5	5	
Bromodichloromethane	<5	5	
1,2-Dichloropropane	<5	5	
cis-1,3-Dichloropropene	<5	5	
Trichloroethene	<5	5	
Dibromochloromethane	<5	5	
1,1,2-Trichloroethane	<5	5	
Benzene	<5	5	
trans-1,3-Dichloropropene	<5	5	
Bromoform	<5	5	



Collection Location	Collector	Client Reference	Accession #
marengo lagoon storm water	graesch matt		2226407

TEST	RESULT (ug/L)	QUANT LIMIT	ANALYSIS NOTE(S)
4-Methyl-2-pentanone	<5	5	
2-Hexanone	<5	5	
Tetrachloroethene	<5	5	
1,1,2,2-Tetrachloroethane	<5	5	
Toluene	<5	5	
Chlorobenzene	<5	5	
Ethylbenzene	<5	5	
Styrene	<5	5	
Total Xylenes	<5	5	
GCMS Semivolatiles, EPA 8270			
Phenol	<5	5	
bis(2-Chloroethyl)ether	<5	5	
2-Chlorophenol	<5	5	
1,3-Dichlorobenzene	<5	5	
1,4-Dichlorobenzene	<5	5	
1,2-Dichlorobenzene	<5	5	
2-Methylphenol	<5	5	
2,2'-oxybis(1-Chloropropane)	<5	5	
4-Methylphenol	<5	5	
N-Nitroso-di-n-propylamine	<5	5	
Hexachloroethane	<5	5	
Nitrobenzene	<5	5	
Isophorone	<5	5	
2-Nitrophenol	<5	5	
2,4-Dimethylphenol	<5	5	
bis(2-Chloroethoxy) methane	<5	5	
2,4-Dichlorophenol	<5	5	
1,2,4-Trichlorobenzene	<5	5	
Naphthalene	<5	5	
4-Chloroaniline	<5	5	
Hexachlorobutadiene	<5	5	
4-Chloro-3-methylphenol	<5	5	
2-Methylnaphthalene	<5	5	
Hexachlorocyclopentadiene	<5	5	
2,4,6-Trichlorophenol	<5	5	
2,4,5-Trichlorophenol	<5	5	
2-Chloronaphthalene	<5	5	
2-Nitroaniline	<5	5	
Dimethyl phthalate	<5	5	
Acenaphthylene	<5	5	
2,6-Dinitrotoluene	<5	5	
3-Nitroaniline	<5	5	
Acenaphthene	<5	5	
2,4-Dinitrophenol	<5	5	
4-Nitrophenol	<5	5	
Dibenzofuran	<5	5	
2,4-Dinitrotoluene	<5	5	
Diethyl phthalate	<5	5	
Fluorene	<5	5	
4-Chlorophenyl phenyl ether	<5	5	
4-Nitroaniline	<5	5	
4,6-Dinitro-2-methylphenol	<5	5	
N-Nitrosodiphenylamine	<5	5	
4-Bromophenyl phenyl ether	<5	5	

Collection Location	Collector	Client Reference	Accession #
marengo lagoon storm water	graesch matt		2226407

<u>TEST</u>	<u>RESULT (ug/L)</u>	<u>QUANT LIMIT</u>	<u>ANALYSIS NOTE(S)</u>
Hexachlorobenzene	<5	5	
Pentachlorophenol	<5	5	
Phenanthrene	<5	5	
Carbazole	<5	5	
Anthracene	<5	5	
Di-n-butyl phthalate	<5	5	
Fluoranthene	<5	5	
Pyrene	<5	5	
Butyl benzyl phthalate	<5	5	
Benzo(a)anthracene	<5	5	
3,3'-Dichlorobenzidine	<5	5	
Chrysene	<5	5	
bis(2-Ethylhexyl)phthalate	<5	5	
Di-n-octyl phthalate	<5	5	
Benzo(b)fluoranthene	<5	5	
Benzo(k)fluoranthene	<5	5	
Benzo(a)pyrene	<5	5	
Indeno(1,2,3-cd)pyrene	<5	5	
Dibenzo(a,h)anthracene	<5	5	
Benzo(g,h,i)perylene	<5	5	
Total Extractable Hydrocarbons, Iowa OA-2			2
Gasoline	<100	100	
Mineral spirits	<100	100	
Kerosene	<100	100	
Diesel fuel	120	100	
Motor oil	<100	100	
Total Extractable Hydrocarbons	120	100	

SAMPLE AND ANALYSIS NOTES

1. Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.
2. The chromatographic profile of the sample extract did not match this laboratory's fuel or oil standards. Quantitation is based on this laboratory's diesel fuel standard.

ANALYSIS INFORMATION

<u>TEST</u>	<u>ANALYZED</u>	<u>SITE</u>	<u>RELEASED</u>	<u>ANALYSIS PREP</u>
1. Mercury, EPA 7470A	2023-01-12 10:37 SGB	3201	2023-01-12 14:50 MRC	
2. Metals, EPA 6020	2023-01-11 09:35 SGB	3201	2023-01-12 12:07 MRC	
3. GCMS Volatiles, EPA 8260	2023-01-09 09:39 LJL	3200	2023-01-10 15:19 TGC	
4. GCMS Semivolatiles, EPA 8270	2023-01-11 14:17 VER	3200	2023-01-12 10:33 TGC	Test 5
5. Prep by Separatory Funnel, EPA 3510 BNA	2023-01-10 11:00 AKG	3200	2023-01-11 14:34 JDA	
6. Total Extractable Hydrocarbons, Iowa OA-2	2023-01-10 10:46 JDA	3200	2023-01-11 09:14 TGC	Test 7
7. Prep by Separatory Funnel, Iowa OA-2	2023-01-09 09:00 LWL	3200	2023-01-09 14:23 MES	

DESCRIPTION OF UNITS

mg/L = Milligrams per Liter
ug/L = Micrograms per Liter



Collection Location	Collector	Client Reference	Accession #
marengo lagoon storm water	graesch matt		2226407

SITE(S) PERFORMING TESTING

- 3201 STATE HYGIENIC LABORATORY ANKENY, IOWA LABORATORIES COMPLEX, 2220 S ANKENY BLVD, ANKENY, IA 50023; Phone 515/725-1600; Fax 515/725-1642; Michael D. Schueller, M.S., Associate Director; Wade K. Aldous, Ph.D. (D)ABMM, Associate Director; IOWA ENVIRONMENTAL LAB ID #397
- 3200 STATE HYGIENIC LABORATORY CORALVILLE, UNIVERSITY OF IOWA RESEARCH PK, 2490 CROSSPARK RD, CORALVILLE, IA 52241; Phone 319/335-4500; Fax 319/335-4555; Michael D. Schueller, M.S., Associate Director; Wade K. Aldous, Ph.D. (D)ABMM, Associate Director; IOWA ENVIRONMENTAL LAB ID #027

The result(s) of this report relate only to the items analyzed. Where the laboratory has not been responsible for the sampling stage the results apply only to the sample as received. This report shall not be reproduced except in full without the written approval of the laboratory. If you have any questions, please call Client Services at 800/421-IOWA (4692) or 319/335-4500.

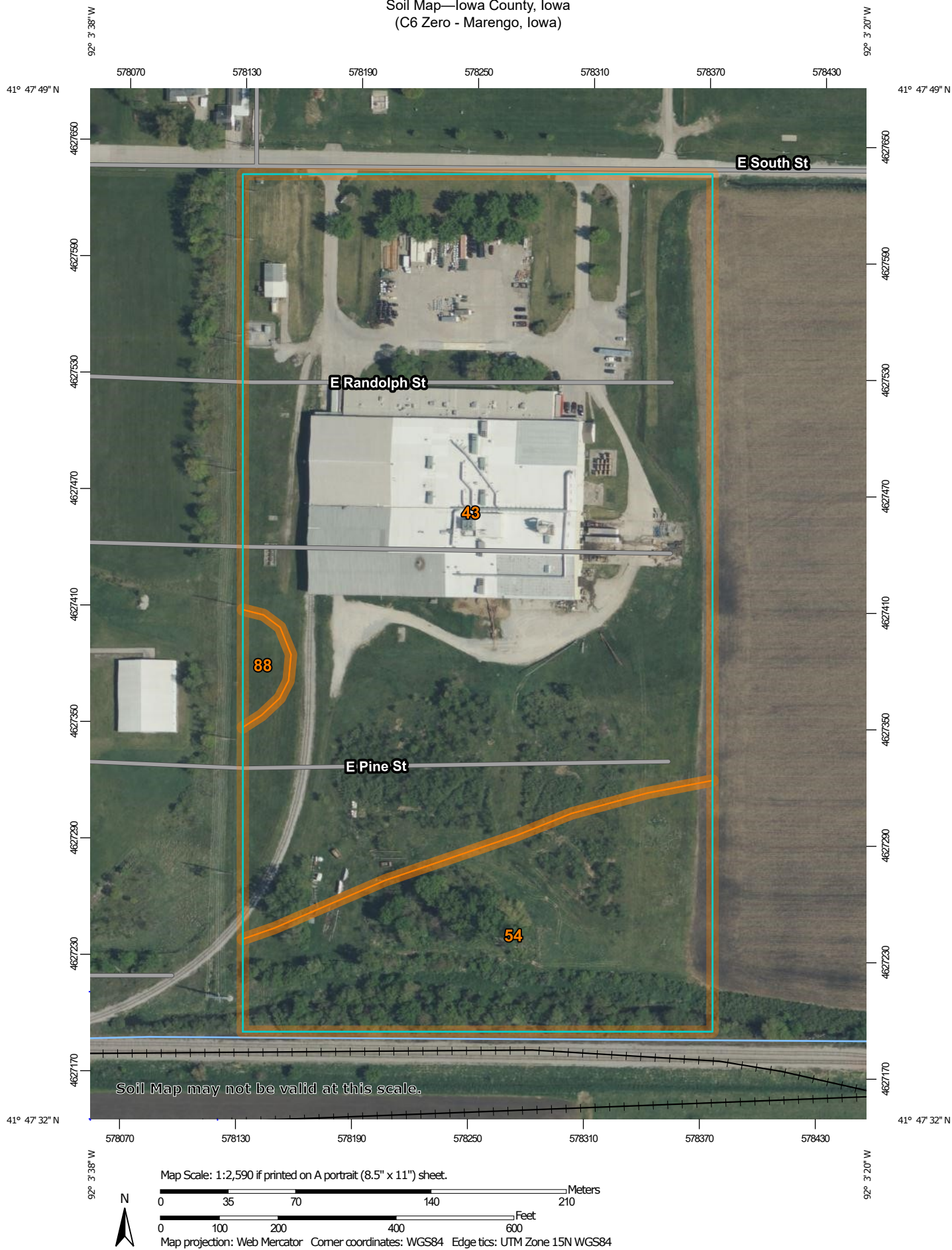
APPENDIX D

SITE REPORTS

- USDA WEB SOIL SURVEY
 - USGS STREAMSTATS
- IDNR FACILITY EXPLORER DATABASE
- US FISH AND WILDLIFE NATIONAL WETLANDS INVENTORY


USDA WEB SOIL SURVEY

Soil Map—Iowa County, Iowa
(C6 Zero - Marengo, Iowa)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Iowa County, Iowa

Survey Area Data: Version 32, Sep 2, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 21, 2021—Nov 24, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
43	Bremer silty clay loam, 0 to 2 percent slopes, rarely flooded	20.8	77.9%
54	Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded	5.6	21.0%
88	Nevin silty clay loam, 0 to 2 percent slopes, rarely flooded	0.3	1.0%
Totals for Area of Interest		26.6	100.0%

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Iowa County, Iowa

43—Bremer silty clay loam, 0 to 2 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: 2y8qz

Elevation: 520 to 1,310 feet

Mean annual precipitation: 23 to 41 inches

Mean annual air temperature: 43 to 54 degrees F

Frost-free period: 155 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Bremer, rarely flooded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bremer, Rarely Flooded

Setting

Landform: Flood-plain steps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty alluvium over clayey alluvium

Typical profile

Ap - 0 to 8 inches: silty clay loam
A - 8 to 19 inches: silty clay loam
ABt - 19 to 27 inches: silty clay loam
Btg - 27 to 42 inches: silty clay
BCg - 42 to 50 inches: silty clay loam
Cg - 50 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: R108XC527IA - Wet Floodplain Sedge Meadow
Hydric soil rating: Yes

Minor Components

Nevin, rarely flooded

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R108XD914MO - Wet Terrace Prairie
Hydric soil rating: No

Data Source Information

Soil Survey Area: Iowa County, Iowa
Survey Area Data: Version 32, Sep 2, 2022

Iowa County, Iowa

54—Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2yvjz

Elevation: 520 to 1,310 feet

Mean annual precipitation: 23 to 41 inches

Mean annual air temperature: 43 to 54 degrees F

Frost-free period: 155 to 210 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Zook, occasionally flooded, and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zook, Occasionally Flooded

Setting

Landform: Flood-plain steps

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty clay loam alluvium

Typical profile

Ap - 0 to 7 inches: silty clay loam

A1 - 7 to 20 inches: silty clay loam

A2 - 20 to 38 inches: silty clay loam

Bg - 38 to 61 inches: silty clay loam

Cg - 61 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: OccasionalNone

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: R108XC527IA - Wet Floodplain Sedge Meadow
Hydric soil rating: Yes

Minor Components

Colo, frequently ponded

Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R108XC525IA - Ponded Floodplain Marsh
Hydric soil rating: Yes

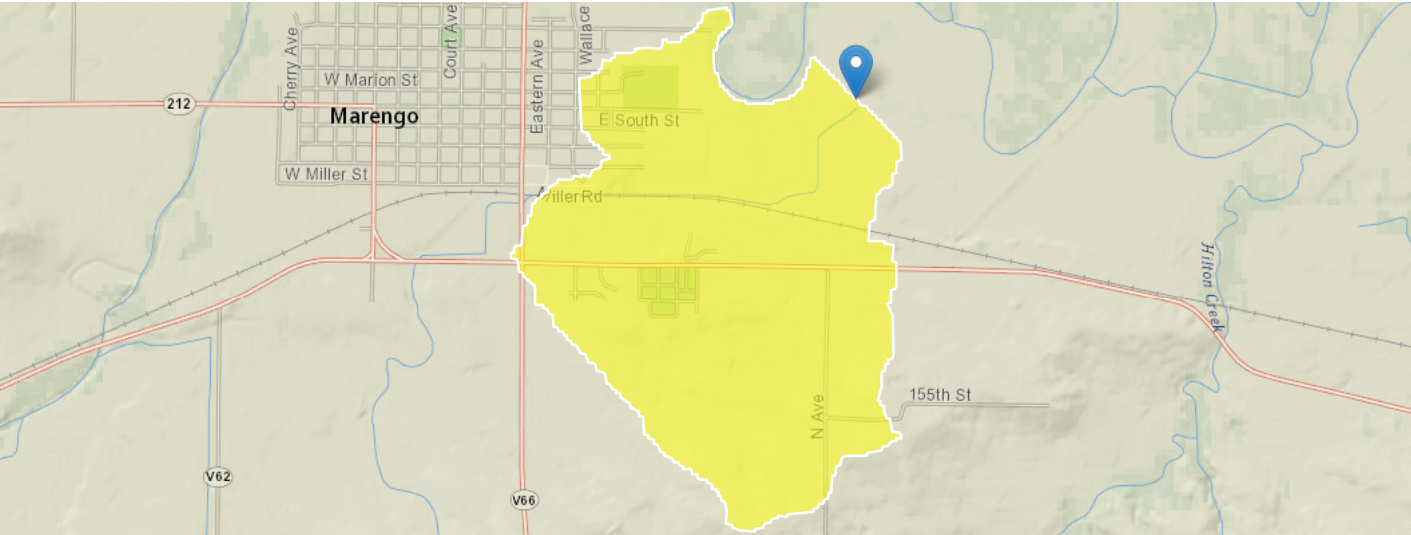
Data Source Information

Soil Survey Area: Iowa County, Iowa
Survey Area Data: Version 32, Sep 2, 2022

USGS STREAMSTATS

C6 Zero - Site Assessment Plan

Region ID: IA
Workspace ID: IA20221231160854669000
Clicked Point (Latitude, Longitude): 41.79723, -92.04338
Time: 2022-12-31 10:09:14 -0600



The delineated watershed includes the area that naturally surface flows to the outlet of the detention pond. This watershed does not include areas outside of the limits that are piped into through storm sewer or sanitary sewer systems.

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSHAPE	Basin Shape Factor for Area	1.59	dimensionless
DESMOIN	Area underlain by Des Moines Lobe	0	percent
DRNAREA	Area that drains to a point on a stream	1.41	square miles

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Region 2 2013 5086]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.41	square miles	0.08	7783
DESMOIN	Des Moines Lobe	0	percent	0	100
BSHAPE	Basin Shape Factor	1.59	dimensionless	0.806	13.94

Peak-Flow Statistics Parameters [Peak Region 2 DA only 2015 5055]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.41	square miles	0.08	7783

Peak-Flow Statistics Flow Report [Peak Region 2 2013 5086]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	ASEp
50-percent AEP flood	194	ft ³ /s	92.3	408	46.8
20-percent AEP flood	458	ft ³ /s	299	702	25.7
10-percent AEP flood	716	ft ³ /s	504	1020	20.8
4-percent AEP flood	1120	ft ³ /s	803	1560	19.4
2-percent AEP flood	1400	ft ³ /s	989	1980	20.4
1-percent AEP flood	1680	ft ³ /s	1150	2450	22.3
0.5-percent AEP flood	2200	ft ³ /s	1440	3350	24.9
0.2-percent AEP flood	2450	ft ³ /s	1530	3930	28.2

Peak-Flow Statistics Flow Report [Peak Region 2 DA only 2015 5055]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	ASEp
Drainage Area Only 50-percent AEP flood	174	ft ³ /s	81.9	370	47.4
Drainage Area Only 20-percent AEP flood	450	ft ³ /s	282	718	28.2
Drainage Area Only 10-percent AEP flood	710	ft ³ /s	477	1060	23.6
Drainage Area Only 4-percent AEP flood	1100	ft ³ /s	734	1650	24
Drainage Area Only 2-percent AEP flood	1420	ft ³ /s	925	2180	25.4
Drainage Area Only 1-percent AEP flood	1760	ft ³ /s	1120	2770	26.9
Drainage Area Only 0.5-percent AEP flood	2120	ft ³ /s	1300	3460	29.1
Drainage Area Only 0.2-percent AEP flood	2610	ft ³ /s	1520	4490	32.6

Peak-Flow Statistics Flow Report [Area-Averaged]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	ASEp
50-percent AEP flood	194	ft ³ /s	92.3	408	46.8
20-percent AEP flood	458	ft ³ /s	299	702	25.7
10-percent AEP flood	716	ft ³ /s	504	1020	20.8
4-percent AEP flood	1120	ft ³ /s	803	1560	19.4
2-percent AEP flood	1400	ft ³ /s	989	1980	20.4
1-percent AEP flood	1680	ft ³ /s	1150	2450	22.3
0.5-percent AEP flood	2200	ft ³ /s	1440	3350	24.9
0.2-percent AEP flood	2450	ft ³ /s	1530	3930	28.2
Drainage Area Only 50-percent AEP flood	174	ft ³ /s	81.9	370	47.4
Drainage Area Only 20-percent AEP flood	450	ft ³ /s	282	718	28.2
Drainage Area Only 10-percent AEP flood	710	ft ³ /s	477	1060	23.6
Drainage Area Only 4-percent AEP flood	1100	ft ³ /s	734	1650	24
Drainage Area Only 2-percent AEP flood	1420	ft ³ /s	925	2180	25.4
Drainage Area Only 1-percent AEP flood	1760	ft ³ /s	1120	2770	26.9
Drainage Area Only 0.5-percent AEP flood	2120	ft ³ /s	1300	3460	29.1
Drainage Area Only 0.2-percent AEP flood	2610	ft ³ /s	1520	4490	32.6

Peak-Flow Statistics Citations

Eash, D.A., Barnes, K.K., and Veilleux, A.G., 2013, Methods for estimating annual exceedance-probability discharges for streams in Iowa, based on data through water year 2010: U.S. Geological Survey Scientific Investigations Report 2013-5086, 63 p. with a (<http://pubs.usgs.gov/sir/2013/5086/>)
Eash, D.A., 2015, Comparisons of estimates of annual exceedance-probability discharges for small drainage basins in Iowa, based on data through water year 2013: U.S. Geological Survey Scientific Investigations Report 2015-5055, 37 p. (<http://dx.doi.org/10.3133/sir20155055>.)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.11.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

IDNR FACILITY EXPLORER DATABASE

Well Search Report

Included in search	No. of wells	Database
X	1	IGS well database General well database maintained by IGS, location accuracy varies 3,730 to 25 ft., last updated 8/2005.
X	0	Public wells Municipal and nonmunicipal public well databases maintained by IGS, location varies 3,730 to 25 ft., under development.
X	0	SDWIS public wells Public well database developed from the Safe Drinking Water Information System database maintained by IDNR, estimated locational accuracy varies from 15m. to 3300m. Created from 5/2005 data.
X	0	Private well tracking system IDNR database management system for Grants-to-counties-covered wells. Locational accuracy unknown, assumed to be +/- 17 m., Last update 7/2005.
X	1	Wells registered for testing Wells tested under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	0	Permitted private wells Wells permitted under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	0	Registered abandoned wells Wells abandoned under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	0	Water use facilities Wells used by facilities permitted to withdraw >25,000 gallons per day, locational accuracy is +/-20m to 1150 m. Created from 7/2005 data.
X	0	Municipal wells and intakes Locational accuracy 220 m., last updated 8/96.
X	0	Ag drainage wells Locational accuracy 100 m., last updated 4/98.

Well Search Detail

Subject: XY UTM Coordinates: 578274/4627473
Search Radius (ft): 1000

IGS Well Database

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
297706	61838	T81N, R10W, 30,	Calc. +/- 3730 ft.	267 (m)	37	5/30/2006	Berstler, Wayne	Bedrock Depth: 0 Well Type: Municipal

Public Wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

SDWIS public wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

Private Well Tracking System

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

Wells Registered For Testing

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
297694	10077	T81N, R10W, Sec. 30, SW, NE, NE	Calc. +/- 1135m.	268 (m)	22	1984	Mccaw, Norman	Drilling method: Driven; Known well depth

Permitted Private Wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

Abandoned Wells (plugged)

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

Water Use Facilities

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

Municipal Wells And Intakes

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

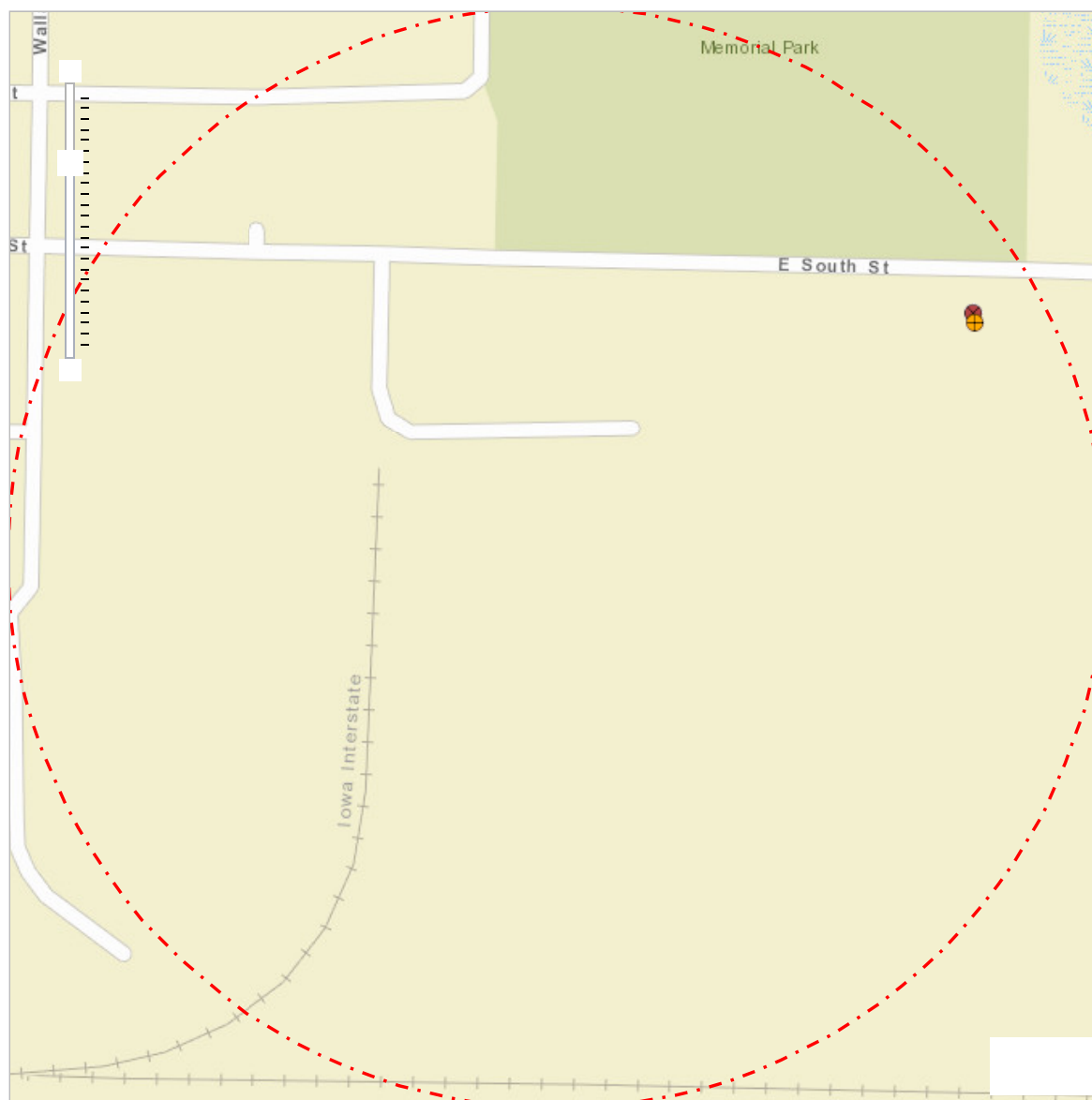
Ag Drainage Wells

Map ID	Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
--------	----------	----------	----------	------------------	------------	---------------------------	------------------	-------------------

No records found from this data source

Well Search Buffered Map

Subject: XY UTM Coordinates: 578274/4627473
Search Radius (ft): 1000



Map Notes:

- UST
- ★ LUST
- ✳ Wells

Please refer to the Accuracy column in Well Search Detail.

Since multiple points can be at the same spot (as those located to the center of a quarter section), points were randomly dispersed within 10 meters around that spot so all points can be seen.

US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY



U.S. Fish and Wildlife Service

National Wetlands Inventory

C6Zero Project Wetlands Map



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

January 2, 2023

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.